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HYDATIDIFORM MOLE AND CHORIO-EPITHELIOMA

A CLINICAL AND PATHOLOGIC STUDY *

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No group of neoplasms is more interesting than that represented by hydatidiform mole and chorio-epithelioma. When one considers that even the normal chorionic epithelium possesses distinctly invasive qualities, one can appreciate the difficulties inherent in the study of the various types of new growth which may spring from this epithelium. This field, perhaps more than any other in pathology, illustrates the interrelationship of a perverted physiology and an abnormal histologic structure. Its study means much more than the study of mere histologic details, and it carries one far afield into the domains of embryology, pathology, physiology and even endocrinology. The solution of such a problem as this is certain to throw a great light on the problem of tumor formation in general.

INCIDENCE

Until recently, hydatidiform mole has been looked on as an exceedingly rare affection. Statistics on the point exhibit wide variations. Essen-Möller, for example, gives the incidence as 3 per thousand, while Madam Boivin considered it far more rare, occurring only once in 20,000 cases. Williamson gives an incidence of 1 in 2,400 cases. Pozzi is quoted as having stated that he had never, in an experience of more than 6,000 cases, encountered a case of hydatidiform mole. Meyer [12] calls attention to the overlooked investigations of Gierse,[13] in 1847, who found that the characteristic changes of hydatidiform disease are found in many abortions and, indeed, constitute a most common cause of abortion in the early months. Gierse believes that hydatidiform degeneration is an extremely common condition in spite of the rarity of the full-blown form of the disease to which authors have usually confined their attention. Storch,[14] in 1878, likewise emphasized the frequency of hydatidiform disease in early pregnancy. Meyer urges that the cases of hydatidiform degeneration reported in the literature are merely end-results of a process, which, in its early stages, is a common cause of early fetal death. He estimates the incidence of these earlier forms of the disease among the fetuses in the Mall collection, including some of the specimens classed as normal, as 10.9 per cent. among the uterine specimens and 20.8 per cent. among the tubal. He estimates, tentatively, that as many as from 4 to 10 per cent. of all conceptions end in hydatidiform degeneration. These figures are rather startling, for they indicate an incidence fully 240 times as great as that given by Williamson, and 33.3 times as great as that given by Essen-Möller.

In view of the relationship between hydatidiform mole and chorio-epithelioma, it is not surprising that statistics indicate a close correspondence as to the age incidence in the two conditions. The average age of patients with chorio-epithelioma, according to Teacher, is 33 years. Of 169 cases, six occurred between 17 and 20 years; seventy-three between 21 and 30; fifty-four from 31 to 40; twenty-eight from 41 to 50, and nine from 51 to 55. The same author gives the following figures with regard to the nature of the preceding pregnancy, based on 188 cases: Seventy-four occurred after hydatidiform mole; fifty-eight after abortion; forty-nine after full-term labors, and seven tubal or ovarian. Teacher very wisely adds that some of the so-called "abortions" probably represented only the throwing off of masses of blood clot or necrotic tissue, so that the proportion of cases following full-time labor is probably greater than is indicated by the foregoing figures.

In a study of 240 cases, Hitschmann and Cristofoletti [17] found that 116 followed mole (48 per cent.); seventy-three followed abortion (30.4 per cent.), and fifty-one followed normal delivery (21 per cent.). Teacher, from a study of 188 cases, showed that seventy-three, or 36.6 per cent., developed after hydatidiform mole; fifty-nine, or 31 per cent., after abortion; forty-nine, or 28 per cent., after labor at or near term, and seven, or 4.4 per cent., following extra-uterine gestation. The figures usually given by other writers on the subject likewise indicate that something like 50 per cent. of all cases of chorio-epithelioma follow hydatidiform mole. There is no reason to feel that this proportion has been overestimated.

On the other hand, I am strongly inclined to the opinion that the statistics to be found in the literature exaggerate the frequency with which hydatidiform moles become chorio-epitheliomatous. Hitschmann and

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

12. Meyer: Hydatidiform Degeneration in Uterine Pregnancy. Contributions to Embryology, Carnegie Institute of Washington **12**: 203, 1921.

13. Gierse, August: Ueber die Krankheiten des Eies und der Placenta, Verhandl. d. Gesellsch. f. Geb. **2**, 1847.

14. Storch: Fälle von sog. partiellen Myxom der Placenta, Virchows Arch. f. path. Anat. **72**: 582, 1878.

17. Hitschmann and Cristofoletti: Zur Pathologie und Klinik des malignen Chorionepithelioms, Wien. klin. Wchnschr. **24**: 655, 1911.

Cristofoletti found, in the study of 200 moles, that fifteen became malignant. Teacher is inclined to believe that the proportion given by Hitschmann and Cristofoletti, i. e., 7.5 per cent., is too high, because the series included fifteen cases recorded by Krömer, in which the diagnosis of malignancy was open to criticism. The subtraction of this group would give a proportion of 5 per cent. in which malignancy supervened after hydatidiform mole, and even this figure, Teacher feels, is perhaps too high.

It is difficult to explain such figures as those collected by Findley,[18] who found that malignancy supervened in fully 26.2 per cent. of 500 cases, except on the assumption that his group contained an overwhelming proportion of very advanced and doubtful cases. In nineteen cases from the Mall collection, none was reported to have developed malignant changes. My own series of eight cases also presents a clear record in this respect. When one considers, on the one hand, the frequency with which cases of hydatidiform mole are overlooked or not reported, and, on the other hand, the relative rarity of chorio-epitheliomatous disease, it seems certain that the proportion of cases of mole followed by malignancy must be very much smaller than has been supposed. Furthermore, if the very great frequency of early hydatidiform degeneration be established, the proportion will be a very small figure, probably only a small fraction of 1 per cent. Up to 1917, Vineberg[19] was able to compile 533 cases of chorio-epithelioma from the literature.

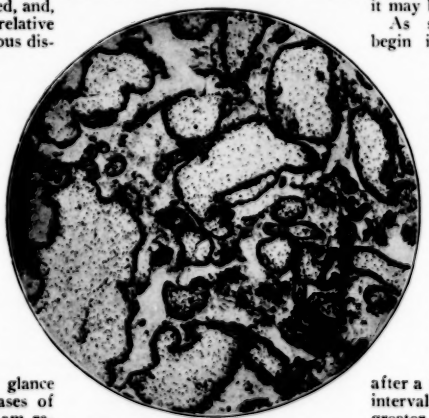

Fig. 1.—Normal chorionic villi of early pregnancy. The stromal blood vessels are clearly seen here and there. Note also the two layers of the trophoblast and the numerous syncytial giant cells (normal).

SYMPTOMS

Hydatidiform Mole.—A glance over the histories of the cases of hydatidiform mole which I am reporting in this paper will show a striking similarity in the symptoms, and the same uniformity is noted in the vast majority of the cases reported in the literature. The characteristic clinical picture is, briefly, the occurrence of bleeding in early pregnancy, associated with a uterus which is disproportionately large for the supposed stage of pregnancy. It is not uncommon, for example, to find a uterus enlarged to the level of the umbilicus at the third month of pregnancy. It is true that in a small proportion of cases, especially of the incomplete variety, the uterus may show little or no enlargement. At times the organ may even be smaller than expected, although I am convinced that most of these are cases in which portions of the mole had previously been expelled without the patient's knowledge.

The bleeding, as has already been mentioned, puts in its appearance early in pregnancy, usually in the second or third month. It is more or less continuous, and may be very profuse, so that the patient often becomes very anemic and at times almost exsanguinated. There is little or no complaint of pain in most cases, although some discomfort may be caused by the expulsion of clots or molar particles.

Chorio-Epithelioma.—Here likewise the most constant symptom is uterine hemorrhage. In some cases it follows almost immediately after the termination of the pregnancy, or occurs during the pregnancy itself. According to Teacher, fifty-four of 107 cases showed bleeding during pregnancy, or within fourteen days after its termination; of the remainder, thirty-five exhibited bleeding within a month, while in only eight was this symptom delayed more than a year. In the latter group, as Teacher adds, it is difficult to rule out the possibility of a fresh pregnancy in the meantime. Bleeding is not by any means an invariable symptom in the earlier stages of the disease, and even amenorrhea may occur, as in the case of Caturani. As with hydatidiform mole, bleeding may be very moderate, or it may be alarming in degree.

As soon as necrotic changes begin in the tumor and this is usually quite early—an offensive vaginal discharge makes its appearance. This is likely to be thin and watery in consistency, and of brownish or bloody appearance. In the last stages this discharge is often indescribably fetid, as in Case 10 of my series.

According to Williams, the first indication of the tumor in more than one half of the cases is the appearance of vulvar or vaginal metastases. In his own case, such a growth appeared within a week after a full-term labor, although the interval is usually considerably greater. These growths are situated most frequently on the anterior vaginal wall, and have a rather characteristic dark bluish, varix-like appearance. Another clinical manifestation of dissemination of the growth is the occurrence of hemoptysis, indicating pulmonary metastasis, a frequent occurrence. I may add, however, that I have observed hemoptysis five days after curetting of the uterus for simple hydatidiform mole. In this case there has been no recurrence of unfavorable symptoms after two years, during which time the woman has passed through a perfectly normal pregnancy and confinement. The later stages of the disease are marked by progressive weakness, anemia, rigors, emaciation, and gradually increasing pelvic pain.

PATHOLOGY

Two facts are worthy of preliminary emphasis in discussing the histologic features of choriomatous tumors: (1) that the histologic elements in hydatidiform mole and chorio-epithelioma are identical with those seen in normal pregnancy, and (2) that even the normal trophoblast is a distinctly invasive tissue, the malignant choriomatous tumors differing from it only

18. Findley, P.: Hydatidiform Mole: An Analysis of Five Hundred Cases, Am. J. Obst. **75**: 968 (June) 1917.

19. Vineberg, H. N.: Clinical Data on Chorio-Epithelioma with End-Results of Operative Treatment, Surg., Gynec. & Obst. **28**: 123 (Feb.) 1919.

in degree. These two considerations are chiefly responsible for the difficulties of diagnosis and prognosis which are presented by many of these tumors. As for the actual histogenesis of these two neoplasms, there has in the past been much difference of opinion, as has been briefly indicated in the opening paragraphs. The evidence at present appears to be quite conclusive that both trophoblastic layers, i. e., the syncytium and the layer of Langhans, are of fetal origin; that both hydatidiform mole and chorio-epithelioma arise from the cells of the trophoblast rather than from the decidual cells of the mother, as was formerly believed, and (3) that both layers are commonly involved, though in varying proportion.

The cardinal histologic features observed, respectively, during normal pregnancy, hydatidiform mole and chorio-epithelioma may be briefly summed up as follows:

Normal Pregnancy.—The chorionic villi are made up of a stroma of light textured myxomatous-looking connective tissue whose consistency varies somewhat according to the stage of pregnancy. After the earliest stages it contains definite blood vessel channels (Fig. 1). Its covering trophoblast, in early pregnancy, consists of two layers, the syncytium and the layer of Langhans. The latter, which adjoins the stroma, is made up of well-defined cuboidal or polygonal cells. The syncytium forms a narrow ribbon of protoplasm in which nuclei are placed at rather frequent intervals. The Langhans layer, while distinct in early gestation, disappears after about the first half or even earlier, so that only the syncytium covers the villi during the later stages.

Fig. 2.—A large villus (hydatidiform degeneration), with almost no trophoblastic involvement. A similar picture is presented in other parts of the section.

Without going into details concerning the formation of the placenta, suffice it to add that the trophoblast, more particularly the syncytium, is often found pushing into the uterine veins and musculature, even in normal pregnancy. Syncytial wandering cells are often found at quite a distance beneath the placental site. Kworostansky,[20] in 1903, showed that fetal elements, especially syncytial giant cells and Langhans cells, may be found in the musculature of all pregnant uteri at any time from the first to the tenth month of pregnancy, and even for a few weeks after delivery. The recognition of this fact is of great importance from the standpoint of the diagnosis of malignancy, as will be emphasized later. The invasion of venous channels is often associated with the separation and deportation of masses of syncytium, or even of entire villi themselves. Schmorl,[21] in 1905, published the results of his examination of the postmortem material obtained from 150 pregnant women. He found lung emboli of such deported placental material exceedingly common, especially in the eighty-three eclamptic women included in the series. In only one case, however—and even this was rather doubtful—did he find a proliferative tendency in this transported tissue. Among the cases of pregnancy in the earlier stages, especially during the first month, he twice found such proliferative activity, although in these two cases he could not be sure that the placenta was normal, as examination of this tissue was impossible. While it thus seems that there is no tendency to active growth of these lung emboli in normal cases, Schmorl adds that, in three cases of hydatidiform mole which he examined from this standpoint, he found evidence of active proliferation in these transported masses.

I have already referred to my Case 4, in which hemoptysis occurred on the fifth day after removal of a hydatidiform mole. The further progress of this case was watched with considerable trepidation, for it was feared that malignant metastasis had occurred. No recurrence of the lung symptoms took place, however. Furthermore, there was no recurrence of uterine bleeding, and the patient has not only remained perfectly well, but has recently passed through a normal pregnancy. Such incidents illustrate well the vagaries and uncertainties attendant on both the diagnosis and the prognosis of these conditions.

Hydatidiform Mole.—The three pathologic changes which characterize hydatidiform mole are trophoblastic proliferation, hydropic degeneration of the stroma, and degeneration of the blood vessels. Since the epoch-making investigations of Marchand, the custom has been to stress the predominant importance of the first of these elements, i. e., the proliferation of the trophoblastic layers. I have personally been impressed, however, with the absence or the slight degree of trophoblastic change to be observed in many hydatidiform moles. It is not unusual, even in the most extreme cases of vesicular mole, to find that the distended villi are covered with only one or two layers of epithelium (Fig. 2). A number of other writers have called attention to these facts (Langhans, Meyer), and there is little doubt that the importance of trophoblastic proliferation has been exaggerated. That it frequently occurs, and that at times it may be very striking (Figs. 3 and 4), cannot be gainsaid; but it can scarcely be considered essential for the microscopic diagnosis of this condition. In this connection it must be borne in mind that different pictures are likely to be encountered in different parts of the mole, and that trophoblastic proliferation may be striking in one area and absent elsewhere. These peculiarities are perhaps chiefly due to the environmental conditions surrounding the villi, depending on whether the villus has

20. Kworostansky, P.: Ueber Anatomie und Pathologie der Placenta; Syncytium in dem schwangeren Uterus; Werkung der Herz- un Nierenkrankheiten auf die Muskulatur und Placenta; Atonie des Uterus, Placentar- Adhärenz, Uterus-Ruptur, Arch. f. Gynäk. **70**: 113, 1903.
21. Schmorl, S.: Ueber das Schicksal embolisch verschleppter Placentarzellen, Zentralbl. f. Gynäk. **29**: 129-137, 1905.

separated from the uterine wall or whether it still receives abundant nutrition from the maternal tissues. It is easy to differentiate the areas of proliferated Langhans cells from the syncytial masses. The latter take a characteristic homogeneous eosin stain, are commonly markedly vacuolated, exhibit no cell differentiation, and often contain large and perhaps multiple nuclei. The Langhans cells, on the other hand, possess the morphologic characteristics of epithelium, appearing as clumps of polygonal cells beneath the syncytium, but not infrequently breaking through the syncytial zone to form large trophoblastic nodules.

Far more important, according to Meyer, are the stromal and vascular changes that take place with vesicular mole. Meyer states that "a villus with a normal stroma and normal vascularization never was found to have undergone true hydatidiform degeneration, but one with a normally active epithelium—both Langhans' layer and syncytium—often was truly hydatidiform." The recent studies of this investigator led

Fig. 3.—Below and to the right is the edge of a hydatidiform villus (Case 5). The trophoblast shows enormous proliferation of both layers. The vacuolated syncytial masses are clearly distinguishable from the masses of Langhans cells. The examination of curettings from such a case might easily lead to the diagnosis of chorio-epithelioma.

him to conclude that the earliest recognizable changes are those which involve the stroma and blood vessels. This observation is of importance because it is these very early stages of the process with which we should endeavor to become familiar. It is difficult to determine whether it is the blood changes or the stromal alterations which come first, but both may be definite even though the trophoblast appears quite normal.

Reference has already been made to the fact that Gierse many years ago, and Meyer more recently, believe that these early hydatidiform degenerations explain many abortions for which no other cause is apparent. The very great practical application of such an observation, if it can be verified, is evident. I have recently been studying many sections of retained embryonic tissue from this point of view, but have not as yet been able to convince myself as to the great frequency of genuine hydatidiform changes in cases of abortion. In a number of tubal specimens which I have recently examined, however, there seems to be no question as to the character of the villous changes. On this point, however, I trust to be able to report more fully at a later date.

The stromal changes, aside from the degeneration of blood vessels, consist of the gradually increasing edema, fenestration and liquefaction of the connective tissue, changes which in the late stages are responsible for the characteristic grapelike appearance of gross specimens. The stroma not infrequently shows numbers of the so-called Hofbauer cells, to which Hofbauer [22] and others formerly attached considerable importance as indicating malignancy. This belief, as will be seen later in the paper, has been quite generally abandoned.

The fetus usually disappears by absorption, although exceptions to this rule are more common than is usually believed. This is especially true in those cases in which the hydatidiform disease is of the partial or incomplete variety.

CHORIO-EPITHELIOMA

If there is any one feature which distinguishes chorio-epithelioma from its benign prototype, it is its invasiveness. Indeed, without definite histologic evidence of the latter, it is as a rule hazardous to make a diagnosis of chorio-epithelioma. One may or may not find chorionic villi still present. When they persist, they are likely to be enormously enlarged. The villi, instead of lying comparatively free, are buried in the tumor cells, which are arranged after a rather characteristic honeycomb pattern. Large islands of cells, obviously derived from Langhans' layer, alternate with masses of syncytial tissue in an alveolar meshwork about blood spaces. Strands of these cells may be followed for considerable distance into the uterine muscle, much of which is necrotic and consequently poorly staining. Almost invariably, large masses of blood and fibrin are seen, accounting for the grumous consistency and the dark reddish appearance presented by these growths in the gross.

CRITERIA OF MALIGNANCY IN CHORIOMATOUS TUMORS

Although, from time to time, various authors have asserted the possibility of distinguishing malignant tendencies in hydatid moles from the microscopic picture alone, it is significant that those of greatest experience with such tumors maintain the unreliability of all such criteria. Marchand, Teacher and others whose experience has been widest do not hesitate to admit their ignorance of any reliable indication of malignancy. I have already stressed the fact that the degree of trophoblastic proliferation is not a safe index, since this varies between very wide limits in tumors which clinically appear to run similar courses. In other words, malignancy may develop whether there is little or much proliferation, and whether one or both layers are involved. Diagnosis from curettings is exceedingly hazardous, for the picture of chorio-epithelioma is often closely mimicked by benign vesicular mole, or even by normal pregnancy. There can be no question that many normally pregnant uteri have been removed mistakenly for chorio-epithelioma, when the diagnosis has been made from curettings. Of five uteri which were

22. Hofbauer, J.: Ueber das konstanten Vorkommen bisher unbekannter zelliger Formelemente in der Chorionzotte der menschlichen Placenta und über Embryotrophe, Wien. klin. Wchnschr. **16**: 871-873, 1903.

sent to Dr. Cullen for examination in a short period of time, and which had been removed on the diagnosis of chorio-epithelioma, only one was really the seat of this disease.

Even when sections of the uterine wall are available, the diagnosis may present difficulties. This is easy to

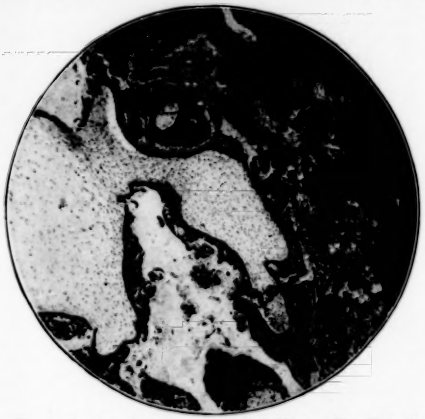

Fig. 4.—Invasion of uterine wall by hydatidiform villus (Case 8), whose trophoblast is markedly proliferated. Note the areas of fibrin and hemorrhage. In this case villi and syncytial masses were found far out in the uterine veins (compare Fig. 6), but the patient is alive and well after twenty years. This case conforms to the type designated by Ewing as chorio-adenoma destruens.

understand when one recalls what has been said as to the invasiveness of the normal trophoblast, and of the fact that trophoblastic elements are not infrequently found in the uterine musculature, far beneath the actual embryonic area. Practically always, however, this invasion is of a somewhat sporadic nature. Strands of trophoblastic cells, especially syncytium, extend into the muscle for a short distance, while, beyond these, scattered syncytial wandering cells may be followed to a much greater depth. When, however, large masses of trophoblast, and especially Langhans cells, advance destructively into the muscle, and when they present the characteristic alveolar grouping about blood spaces, there is no difficulty in diagnosing chorio-epithelioma (Fig. 5). It cannot be too strongly emphasized that the finding of syncytial or even villus masses in the uterine veins, perhaps far removed from the placental area, is not an indication of malignancy. Figure 6 shows such a trophoblastic mass in a uterine vein. It is taken from Case 8, and the patient is alive and well twenty years after operation.

Reference has already been made to the frequncy with which metastases occur with chorio-epithelioma. They may properly be considered as evidences of malignancy, although, as has already been noted, recovery is possible even after the occurrence of metastases. Hofbauer, some years ago, described certain large, globular, acid-staining cells, often with eccentric nuclei, and not infrequently multinuclear, which occur in the stroma of the villi of some moles. He considered these cells of trophoblastic origin and as indicative of malignancy. This idea has been abundantly disproved. The subject has been recently reviewed by Meyer, who comes to the conclusion that these cells merely represent degeneration phases of the mesenchyme cells, an explanation which is probably correct. I have seen such cells in moles which, from both their histologic structure and their subsequent course, were undoubtedly benign. On the other hand, they are often absent in the obviously malignant cases.

ASSOCIATION OF LUTEIN CYSTS OF THE OVARY WITH CHORIOMATOUS TUMORS

There is no aspect of the general subject of choriomatous tumors more interesting than the frequent association with such growths of multiple lutein cystic conditions of the ovaries. Statistics as to the frequency of this association vary. Of 144 cases of choriomatous tumors compiled by Runge, there was no note as to the ovarian condition in sixty-three; in twenty-four, the ovaries were more or less cystic; in eleven, palpation showed no changes, and in twenty-eight no cystic changes were found at operation. Of twenty-eight cases of vesicular mole, no note as to the ovarian findings was made in sixteen, while twelve showed cystic degeneration.

Many authors, unfortunately, make no effort to discriminate between the simple cystic degeneration which is so common during pregnancy and the remarkable multilocular lutein cysts which are far more characteristic of the condition under discussion. Indeed, these interesting lutein tumors are found only in association with choriomatous neoplasms. When one reads, therefore,[23] that as many as 91 per cent. of choriomatous tumors were found to show bilateral cystic change in the ovary, one must qualify this statement in the light of the distinction which has just been drawn. Although all of my eight patients with hydatidiform mole were carefully examined for these ovarian changes, the find-

Fig. 5.—Chorio-epithelioma (Case 9). The trophoblast, especially the Langhans cells, is seen invading and destroying the uterine muscle, vestiges of which are seen near the center of the field. No trace of villous structure is left.

ings on palpation were negative in all except one. Of the four chorio-epitheliomas I am reporting, moreover, none showed the really characteristic ovarian lesion,

23. Patellani, S.: Zur Frage der Ovarialveränderungen bei syncytialen Tumoren und Blasenmolen, Zentralbl. f. Gynäk. **29**: 388, 1905.

although at least one showed a large cystic ovary. It is only fair to state, however, that no great importance can be attached to these figures, as in only one of the hydatidiform moles and three of the chorio-epitheliomas was there an opportunity for microscopic study of the ovaries.

In the most recent study of this subject, Cottalorda [24] found lutein cysts present in 59 per cent. of the cases of hydatidiform mole, and in 9.4 per cent. of those of chorio-epithelioma. He believes that the presence of these ovarian cysts with hydatidiform mole is indicative of a malignant tendency, and should therefore be looked on as an indication for total hysterectomy and removal of the ovaries. This deduction, to my mind, is not justified by past experiences, and certainly should not be accepted until far more convincing evidence is produced than is now available.

The histogenesis of the lutein cells which are so abundantly found in these ovarian tumors has been differently interpreted by different authors. Schaller and Pförringer, many years ago, interpreted such a case as representing an infiltrating carcinomatous activity on the part of the lutein cells. Stoeckel, in 1902, gave the first adequate description of the condition, and showed the characteristic participation of the lutein cells. Since then Seitz,[25] Wallart [26] and others have urged that the lutein cells are of the type of theca-lutein cells, and that the process is merely an exaggeration of what happens during normal pregnancy.

A study of the unusually fine specimen of this ovarian lesion which was found in my Case 8 convinces me of the general correctness of this view. During normal pregnancy, the theca cells of the atretic follicles in the ovary undergo definite hypertrophy and assume lutein-like characteristics, so that they have been designated as theca lutein cells. This term distinguishes them from the granulosa-lutein cells, which are the essential cells of the ordinary corpus luteum. Presumably, the stimulus for the formation of the theca-lutein cells emanates from the embryo, probably the trophoblast.

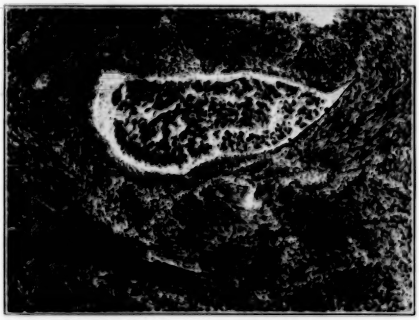

Fig. 6.—Trophoblastic mass plugging large uterine vein in Case 8, the same hydatidiform mole from which Figure 4 was made. Note also the numerous "syncytial wandering cells" in the uterine muscle.

With hydatidiform mole or chorio-epithelioma it would seem that the trophoblastic overgrowth is responsible for an enormous increase and perhaps perversion of this causative stimulus, so that the ovarian response is correspondingly increased. The number of atretic follicles is increased and the lutein-like changes in the theca cells become pronounced. Even the theca cells of follicles which have long since become atretic or which have already become converted into corpora fibrosa are wakened into activity by this stimulus, to which they appear to be specifically sensitive. This explains why the theca-lutein cells are so often found beneath a deep layer of connective tissue, and why they often appear to be buried deep in the ovarian stroma (Fig. 7). It was this characteristic, no doubt, which led Schaller and Pförringer [27] to interpret the condition as a carcinomatous infiltration.

The peculiarity of distribution of the theca-lutein cells, even more than any innate morphologic differences, serves to distinguish them from the granulosa-lutein cells of either the normal corpus luteum or the corpus luteum cyst. In the latter, for example, the lutein cells occur as a more or less well defined zone, corresponding to the lutein zone of the original corpus luteum. From such facts as these, the evidence seems quite convincing that the multiple ovarian cysts seen in some cases of chorioma are to be looked on as multiple lutein cysts, but not corpus luteum cysts.

If the foregoing deductions are correct, these cysts are secondary to the chorioma, instead of vice versa, as Pick [28] and Jaffé [29] have maintained. These authors believe that the ovarian changes are actually the cause of the hydatidiform mole or chorio-epithelioma, as the case may be. Aside from its other discrepancies, such a theory offers no explanation for those cases in which this ovarian change is absent. This group, as has already been said, constitutes the great majority.

A combination of the two theories has been suggested by Penkert [30] within the past year, to the effect that chemical substances may be elaborated during pregnancy, perhaps as a result of endocrine disturbance, which may exert their effect in any one of various ways: (1) on the embryo, with the production of hydatidiform mole or chorio-epithelioma; (2) on the ovaries, especially on the atretic follicles, causing a "hyperreactio luteinalis" with multiple lutein cyst formation; (3) on both embryo and ovaries, which are, therefore, both the seat of pathologic change.

That the multiple lutein cysts which we are here considering are not to be looked on as genuine neoplasms is indicated by the fact that their spontaneous disappearance, after removal of the pathologic conceptus, has been noted by a number of observers (Santi, Fraenkel, Ballerini, Gouillod, Courant and others).

CLASSIFICATION OF TYPES

Various efforts have been made to divide choriomatous tumors into types or groups. The most author-

24. Cottalorda, J.: La mole hydatidiforme, le chorio-épithéliome et les kystes lutéiniques de l'ovaire: rapports étiologiques, cliniques et opératoires, Gynéc. et obst. **4**: 119, 1923.

25. Seitz, L.: Zur Frage der Luteinzellenwucherung in atretischen Follikeln während der Schwangerschaft, Zentralbl. f. Gynäk. **29**: 257, 1905.

26. Wallart, J.: Zur Frage der Ovarialveränderungen bei Blasenmole und bei normaler Schwangerschaft, Zentralbl. f. Gynäk. **29**: 385, 1905.

27. Schaller und Pförringer: Zur Kenntnis der vom Corp. lut. ausgehenden Neubildungen, Beitr. f. Geburtsh. u. Gynäk. (Hegar's) **2**: 91, 1899.

28. Pick, L.: Zur Frage der Eierstocksveränderungen bei Blasenmole, Zentralbl. f. Gynäk. **27**: 1033-1043, 1903.

29. Jaffé, J.: Blasenmole und Eierstock: Ein Beitrag zur Pathologie des Corpus luteum, Arch. f. Gynäk. **70**: 462, 1903.

30. Penkert, M.: Zur Frage der ursächlichen Zusammenhangs zwischen Blasenmole und cystische Ovarialveränderungen (Luteinpseudokystom), Arch. f. Path. Anat. u. Physiol. **229**: 113-136, 1921.

itative have been those of Teacher and of Ewing. The former divides these conditions into (1) the simple hydatidiform mole; (2) the malignant or destructive hydatidiform moles, which differ from the former chiefly in a little more trophoblastic overgrowth, infiltration of the decidua, and invasion of vessels, and also in the establishment of metastases; (3) the pure chorio-epithelioma; (4) a group between the last two, made up chiefly of epithelium and showing a few villi.

Somewhat simpler is the classification of Ewing, who groups chorioma under three heads: (1) hydatidiform mole; (2) chorio-adenoma destruens, and (3) chorio-carcinoma. It is probable that the term applied to the third group will not supplant the one which has come into general usage, chorio-epithelioma. The first and third subdivisions are clear-cut enough. The second, chorio-adenoma destruens, embraces those cases which exhibit definite invasiveness, trophoblastic proliferative activity, and other evidences of malignancy, but in which chorionic villi are still present. I do not see the wisdom of classifying these as a separate group. The mere finding of a few chorionic villi has no decisive bearing on the malignant characteristics of the tumor, any more than does the finding of areas of normal epithelium in a section of cervical cancer. Furthermore, the finding of villi is in a measure an accidental matter, depending on the portions of the tumor which happen to be cut for microscopic examination. It is probable that many cases placed in the third group, the outspoken chorio-epitheliomas, would show chorionic villi if examined sufficiently thoroughly.

Fig. 7.—The upper edge shows the wall of one of the multiple lutein cysts found in the ovaries in Case 8. An imperfect layer of dark staining theca-lutein cells is seen just beneath the connective tissue of the cyst wall. Deeper down is an old obliterated atretic follicle (corpus fibrosum) whose walls show a marked theca-lutein reaction. These cells are morphologically not unlike liver cells. A similar "hyperreactio luteinalis" is seen throughout the large cystic masses found in both ovaries.

It is easily conceivable that even in a definitely malignant choriomatous tumor there might still be present some of the normal or hydatidiform villi from which the tumor takes its origin. It is true that in the outspokenly malignant cases, as in my Case 9, no trace of villous structure is left. On the other hand, the preservation of a typical villous pattern constitutes histologic evidence against advanced malignancy. An excellent illustration of this borderline group is furnished by my Case 8. The pateint had previously expelled a large mass of what was evidently hydatidiform molar tissue. Even when the uterus was removed, vesicles (i. e., hydropic villi) were still present in large numbers. Figure 4 shows clearly the relation of the greatly enlarged hydatidiform villus to the uterine wall. The latter is invaded by the greatly proliferated trophoblast, more especially the syncytium. But an invasion like this may be seen even in normal pregnancy, as I have already emphasized. Furthermore, in Figure 3, which shows an unquestionably benign mole, we see a degree of trophoblastic overgrowth fully as marked as in Figure 4. Case 5, from which Figure 3 was made, would no doubt have shown a picture similar to that seen in Figure 4 had the uterus been removed and examined microscopically. Unless such careful microscopic examinations are made, cases similar to my Case 8 go down in the literature as instances of chorio-epithelioma, when as a matter of fact they represent an essentially benign form of chorioma. Here, as elsewhere, it is not always possible to say where the benign process ends and the malignant one begins, and it is, of course, quite probable that many of these proliferatively active moles already represent an early form of malignancy. But as soon as they become malignant, they pass over into the domain of chorio-epithelioma. There would thus seem to be no advantage in speaking of benign and malignant hydatidiform moles, any more than speaking of benign and malignant papilloma. The latter is to all intents and purposes a carcinoma, and the malignant hydatidiform mole is a chorio-epithelioma, though perhaps in a still early stage.

In other words, whether or not we are able to recognize the fact microscopically, these choriomatous tumors are either benign or malignant. Moreover, the applicability of the term "chorio-adenoma" is open to question. Ewing's statement that the chorionic villus is anatomically and physiologically to be compared to a gland will not be conceded by all. It is really more properly compared to an intestinal villus. It is unfortunate that the term "hydatidiform mole" has come into such general usage. It is founded on an earlier and, of course, incorrect conception of the nature of the disease. In one sense it is to be looked on as a degenerative process, but the trophoblastic new growth perhaps entitles it to discussion among neoplastic growths.

It would seem sufficient, from what has been said, to recognize as the two fundamental types of chorioma (1) chorioma benignum, or hydatidiform mole, and (2) chorioma malignum, or chorio-epithelioma. The latter may or may not exhibit remnants of the chorionic villi from which it arises. In the more advanced stages, villi are not ordinarily seen. On this basis, the relation existing between the normal chorion, hydatidiform mole, and chorio-epithelioma would be somewhat analogous to that which exists between the normal skin epithelium, the benign papilloma, and the malignant epithelioma. As in the diagnosis of carcinoma, the destruction of the normal villous pattern would seem to be the especial feature of the malignant chorioma. On the other hand, the benign chorioma, while it may show marked trophoblastic proliferation and a certain amount of invasiveness, is characterized by a preservation of the characteristic branching pattern of the normal placental structure.

BEARING OF PATHOLOGY ON TREATMENT

It is not my intention in this paper to discuss at any length the matter of the prognosis or treatment

of chorioma, except to touch on one or two points which are closely related to our knowledge of its pathology. In the first place, it is quite certain that thorough evacuation of the uterus will cure hydatidiform mole in the great majority of cases. Following this procedure, the patient should be kept under close observation for many months. In the event of a persistence of bleeding, it is perhaps best to proceed at once to a panhysterectomy, although it is undoubtedly true that in a certain number of cases the condition will be found to be nonmalignant after removal of the uterus. The danger of waiting is so great, however, and the diagnosis from microscopic examination of scrapings so hazardous, that hysterectomy in such cases is fully justified. This is especially true in view of the warning of Hitschmann and Cristofoletti that curettage increases the danger of disseminating the disease. The importance of thorough pathologic study of the uterus after removal cannot be too strongly emphasized. Diagnostic pitfalls are more frequently encountered in this field than in any other in gynecologic pathology, as has already been pointed out.

Although chorioma is so suggestive of carcinoma in many of its characteristics, it differs from the latter in that it is spread chiefly along the vascular channels, after the manner of a sarcoma. For this reason, it would seem to be sufficient to perform simple panhysterectomy, unless the parametrial veins are the seat of local thromboses, owing to the immediate invasion of the growth. In this case, a more extensive extirpation would be demanded.

ABSTRACT OF DISCUSSION

DR. FRED TAUSSIG, St. Louis: The terms Dr. Novak used—benign and malignant chorio-epithelioma, the benign applying to the hydatidiform mole—is a very good definition. We encounter here the same difficulty that we do in dealing with tumors of the ovary. Even after we have removed the tumor, we are not certain as to the extent of the malignancy. What shall we do under these conditions? In a study I made many years ago of the hematomole, I was impressed with the occasional finding of specimens showing edema of the chorionic villi; in fact, very marked swelling of the chorionic villi resembling, to a slight degree, the hydatidiform mole may be found, especially in retained abortions. Then, there are the more definite placental changes, those in which at least one half or more of the placental tissue has been converted into a grapelike mass. They are the borderline conditions—cases that might or might not be malignant. How are we to differentiate? Schuman of Philadelphia suggested opening the abdomen, doing a hysterotomy, and, if the uterine wall was not definitely invaded by the mole, removing the mole and leaving the uterus. In case of invasion of the wall, a hysterectomy is done. I am not certain as to the possibility of implantation metastasis occurring at the time of such procedure; but if that should prove not to be of importance, the procedure is justifiable and advisable. However, one other point should be kept in mind. After a woman has had one, two or three children, the uterus no longer possesses the same value that it does in a younger woman. When we are dealing with a hydatidiform mole in a woman who has had one or more children, I believe that the relatively high incidence of chorio-epithelioma following such moles justifies hysterectomy. We should assume the same attitude that we do in the treatment of other so-called precancerous lesions. After the condition has become malignant, particularly in the case of chorio-epithelioma, it is almost hopeless to effect a cure. Therefore, let us be radical, at least in the treatment of those women in whom the uterus has already functioned in child bearing and to whom the possession of that organ is not of vital importance.

DR. HERBERT A. BLACK, Pueblo, Colo.: There are three especially striking features in connection with chorio-epithelioma. The first is the indefinite length of time that the chorionic villi may remain alive and dormant within the maternal tissue; second, the marked tendency which these growths have to metastasis; third, the large number of reported cases of recovery following the removal of the primary growth. Of all malignant neoplasms, none may run a more rapid course, or be followed by more complete recovery after removal of the primary growth than chorio-epithelioma. How long the chorionic cells may remain alive within the maternal tissues, we do not know. They may remain dormant for weeks or even years, and then suddenly take on a malignant proliferation and development. As to metastases, there is no record of a death from chorio-epithelioma in which extensive metastasis was not found at the necropsy. Usually metastasis takes place early and quite extensively. For some reason the removal of a primary growth will seemingly be followed by a complete clinical recovery. A few cases are on record of spontaneous recovery from chorio-epithelioma. I reported a case that seemingly was of this variety. The woman had a distinct chorio-epithelioma so extensively involving the pelvic walls and the intestines that at the time of operation the abdomen was closed without further operative procedure. The diagnosis had been established by examination of the contents of the uterus obtained by a previous curettage. She developed marked metastasis with mental derangement, suggesting metastasis in the brain. After about a year she began to improve. She is still living. After a period of nearly five years, she has recovered her health to such a degree that she is doing her own work and, clinically, she is well.

DR. OTTO H. SCHWARZ, St. Louis: Dr. Novak stated that Meyer paid particular attention to the absence of blood vessels. It is my opinion that blood vessels are not found until after the twelfth week in any degree at all. Therefore, how can so much importance be laid on this particular point? I have examined a considerable number of incomplete abortions microscopically, and have not been able to make out anything like early hydatidiform mole. That experience tallies somewhat with Dr. Novak's. I am also interested as regards the occurrence of lutein cystomas. My experience is limited to three cases. In one instance the mole was expelled, and the operator, finding these palpable tumors, immediately went in from above and removed both ovaries, as they contained multiple lutein cystomas. In another case a diagnosis of ovarian tumor was made in connection with a uterine pregnancy. These tumors, which proved to be multiple lutein cystomas, were removed. The woman is now about twenty weeks pregnant, and no fetal heart beat or fetal movement has been made out. I would like to ask Dr. Novak if he has ever seen these tumors in association with anything but hydatidiform mole or chorio-epithelioma. The third case was one in which a palpable tumor was made out at the time of operation, under anesthesia. The left ovary was palpated very definitely. It was about the size of one's fist. The mole was expelled. The patient was treated conservatively, and returned in three months with marked hemorrhage. Chorio-epithelioma was suspected. Without any diagnostic curettage, the tumor, uterus and adnexa were removed. The tumor, noted three months previously, had disappeared entirely. The suspected lutein tumors had undergone involution. I was very glad to note the conservative manner in which Dr. Novak treated cases of hydatidiform mole. I feel that the same conservatism should be applied to the frequently accompanying lutein cystomas. It is my opinion that in most instances these tumors are removed without their true nature having been recognized.

DR. J. EARL ELSE, Portland, Ore.: I wish that Dr. Novak would tell us a little more about this matter of the extension of cells and chorionic villi into the uterus which he states occurs normally sometimes. As I remember the teaching of Virchow, he stated that when a group of cells extended in this manner in a normal condition, interstitial cells would also be found; that any extension of cells, as shown by Dr. Novak, would mean metastasis with prima facie evidence of

malignancy. I would like to ask him how he obtained these benign cases; whether from operative procedure or postmortem. May it not have been possible that this would have developed into a malignant process? Can we really say that it is a normal condition occurring in pregnancy? Is it not evidence of malignancy?

DR. T. J. WATKINS, Chicago: Dr. Novak has emphasized two very important points: First, that the dangers of these moles' becoming malignant is not so great as the literature has led us to believe. Second, that malignant tissue is easily mistaken for normal tissue in cases of hydatidiform moles. In an experience of thirty years, I never encountered a malignant degeneration of one of these moles. I would strongly recommend, in cases of this kind, that radium be inserted into the cavity of the body of the uterus as a prophylactic measure. This type of cell is very susceptible to radium.

DR. MOSES CHILDRESS, Oskaloosa, Iowa: I have had no experience with mole per se, but I did have an interesting case of chorio-epithelioma following pregnancy. The woman was about 26 years of age, and this followed her second child. She had a normal labor. One month later the physician was called on account of hemorrhage. He curetted, getting a large quantity of what he thought was placenta. In two or three weeks the same process was repeated. Before I saw her, they had curetted five times, getting placenta every time. I recommended that the woman be taken immediately to the hospital. Her hemoglobin percentage was 28. A transfusion was done. Hysterectomy followed. The uterus was found perforated. There were several blood clots in the peritoneal cavity. I completed the operation, supposing that there would be a speedy recurrence. That was eight years ago. The patient is strong and healthy, weighing 170 pounds. So I would make a plea not to turn these cases away without making an effort. They are malignant, very much so, and maybe there will be a speedy recurrence; but if there is not a recurrence in six months, probably the patient is well.

DR. J. P. GARDINER, Toledo, Ohio: I had hoped that Novak would give us some idea as to the cause, or rather as to what he thought the cause may be of hydatidiform mole and of chorio-epithelioma. Those of us who are doing obstetric work meet hydatidiform mole in its beginning, and it often puzzles us to make a differential diagnosis between a hydatidiform mole and a dead fetus. My experience has been that hydatidiform mole is more frequent than is generally believed. The uterus is enlarged, and we know from examination that something is wrong. With a dead fetus, the uterus is flatter and softer than normal; with a mole, the uterus is rounder and also softer than normal. These two points will often assist us in our difficulty. Then, too, there may be a little vaginal discharge containing some of the grapelike cysts, which clinches the diagnosis. In making microscopic sections of hydatidiform moles, we find that the only live structures are the syncytium and the layer of Langhans. The stroma of the villus has degenerated, and the blood supply has also disappeared. Therefore, the active growth of this disease must be due to these live structures. It seems to me that the differentiation between hydatidiform mole and chorio-epithelioma may be very much like that between the ordinary papilloma or wart and the malignant papilloma. The wart grows and finally disappears; the malignant papilloma causes metastasis and the patient dies. Berry Hart of Edinburgh several years ago reported a case of hydatidiform mole in which he curetted six times and each time it recurred. He simply kept on curetting, and finally the patient recovered. If we take time to curet carefully and clean out the uterus properly, that is the thing to do, and then wait for further developments. Usually nothing develops, and the disease is cured. Rarely, as in Hart's case, there may be a recurrence, or, if there are hemorrhages, malignancy may be suspected, at which time appropriate treatment must be rendered.

DR. J. CRAIG NEEL, San Francisco: Two or three years ago I saw a young Spanish woman who had two children. She stated that she had missed no periods previously, although later we obtained the history that probably she missed the last period by two weeks or more. When I was called to see the patient, she was almost completely exsanguinated. The vaginal vault was filled with a growth and blood clots. The character of the growth we could not determine. However, thinking that it was probably chorio-epithelioma, I advised that we give her some chance by stopping the hemorrhage. We took her into the hospital, and evacuated the uterus and packed it. We recovered many ounces of a growth, not a hydatidiform mole, however. It was an irregular mass of tissue, which we submitted to a number of men who are recognized leading pathologists of this country. Some said it was chorio-epithelioma. The others would not commit themselves. But, thinking that we would give her a chance, we gave her three radium treatments. The uterus contracted; the bleeding stopped, and the patient remains well today. Whether it was a chorio-epithelioma or whether it was a benign tumor, I do not know, and I do not know how we are going to tell. At any rate, the radium did no harm, and I am rather inclined to think that it did some good. So, as Dr. Watkins has suggested, I believe it is safe and important to give some radium treatment in any suspicious case of this kind.

DR. EMIL NOVAK, Baltimore: In reply to Dr. Schwarz' question, embryologists tell us that blood vessels make their way into the villi within the first few weeks of pregnancy—certainly long before the twelfth week. One of the slides which I showed was made from a case in which only one menstrual period had been skipped, and yet it showed well formed blood vessels quite clearly. The multiple lutein cystomas which I described in my paper occur only in association with either hydatidiform mole or chorio-epithelioma. So far as I know, they have never been observed under any other conditions. As to Dr. Else's question concerning the presence of endometrium, I am convinced that this is a matter of no importance in the diagnosis of malignancy. Even in normal pregnancy the villi are usually not covered by endometrium, and, of course, there is no endometrium in the pulmonary deportations seen so frequently under normal conditions. I am glad that there has been such general agreement on the matter of the proportion of cases in which hydatidiform mole is followed by malignancy, and that all the speakers agree with me that this proportion has in the past been greatly overrated. If this point has been established, a useful service has been performed, for there are still not a few men who believe that hysterectomy should be the treatment of hydatidiform mole. The removal of the hydatidiform tissue, however, is all that is necessary in the overwhelming majority of cases, as I emphasized in the paper.

Intravenous Use of Quinin in Malaria.—When quinin is given intravenously by routine in malaria treatment, according to Dr. K. F. Maxcy, it can hardly be claimed that the procedure is without danger. The sudden introduction of a concentrated solution into the blood stream tends to cause circulatory depression and distressing nervous phenomena. Accidental extravasation into the tissues at the point of injection is apt to cause local necrosis and sloughing. Against these dangers is the unquestionable rapidity with which the drug is brought into contact with the parasites in the blood stream. Except for this there is no clear evidence at present that in ordinary malaria infections the method is more effective than mouth administration in curing an acute attack, in ridding the blood of sexual forms, or in preventing relapse. Its proper field of usefulness seems to be upon urgent clinical indications of two sorts: first, in cases in which prompt absorption by the gastro-intestinal tract, following mouth administration, is not to be expected because of violent gastro-intestinal disturbance or other cause, or in which it is impossible to give the drug by mouth on account of delirium, coma, etc.; and second, in patients who are gravely ill when first seen by the physician and in whom it is deemed imperative to secure immediate cinchonization. It does not seem necessary nor desirable to use the intravenous route of administration in the simple acute or chronic infections ordinarily encountered, whether tertian or aestivo-autumnal. All the precautions which are observed in giving a dose of arsphenamin should be observed in giving quinin.

ALCOHOLIC INJECTION OF SECOND AND THIRD DIVISIONS OF TRIGEMINAL NERVE

CLINICAL RESULTS WITH MORE EXACT TECHNIC *

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The injection of alcohol into the three divisions of the trigeminal nerve has long been recognized as a procedure of marked value in the treatment of trifacial neuralgia. In cases of malignant growths about the mouth and jaws, permanent blocking of the sensory pathways leading to the parts involved relieves the pain caused by the growth and does much to ameliorate a very distressing condition. A case of bilateral masseter spasm has been treated by alcoholic injection of one mandibular sensorimotor branch with considerable temporary improvement. To be entirely effective, the alcohol must be injected directly into the nerve trunk, enter the nerve sheath, and actually come in contact with each individual fasciculus. Infiltration of the tissue immediately about the nerve with alcohol may cause a partial loss of sensation, but the effect will be neither so complete nor so lasting as an accurate injection.

With the idea of standardizing our methods of performing these injections, an instrument called a zygometer was devised.[1] A study in the dissecting room on cadavers was undertaken,[2] using this instrument to give a uniform point of entrance for the needle through the cheek. When the needle was seen to be actually in the nerve, the angles in the horizontal and vertical planes formed by the needle-shaft and the cutaneous surface were carefully measured by a protractor, and the distance from the skin at which the nerve was reached was noted. As a result of this investigation, it is possible to make the following suggestions for injecting the maxillary and mandibular divisions of the trigeminal nerve: When the zygometer is in place, the button on the instrument is in the external auditory meatus, and the inferior edge of the anterior end of the lower bar on a level with the masseteric border of the malar bone. The injection of the mandibular division is made through a point opposite the 2 cm. mark on the lower bar of the zygometer, the needle passing just below the zygoma. The needle-shaft should make an angle with the skin of 110 degrees from above downward in the vertical plane, and 90 degrees from before backward in the horizontal plane. The nerve should be reached between 4.5 and 5 cm. from the surface. For the maxillary division, a point opposite the 3 cm. mark on the lower bar of the zygometer is chosen. The needle passes below the zygoma upward and slightly forward, the shaft subtending an angle of 100 degrees on the protractor in the horizontal (above downward) and 115 degrees in the vertical plane (before backward). At a depth of from 5 to 5.5 cm. from the surface, the nerve should be encountered.

Fig. 1.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (110 degrees) in vertical plane with protractor.

With these facts in mind we have kept a careful record of the injections in clinical cases during the past year. Seventy-five patients have been treated by alcoholic injection, sixty-six for neuralgia, eight for malignancies about the face and jaws, and one for masseter spasm. In all, ninety-four injections were made in seventy-five cases, forty in the second division and fifty-four in the third division. Curiously enough, the right fifth was involved in forty-six cases, and the left in twenty. In the neuralgia cases the average age was 55 years, the youngest 23, the eldest 81. Tic douloureux is predominantly a disease of later life. The pain is typical, paroxysmal, flashing, burning and tearing in character, distinctly localized in the peripheral distribution of the nerve, most commonly unilateral, when unilateral limited strictly to the side involved and never crossing the midline, and the course of the pain is horizontal rather than vertical. Patients who complain of pain which starts in either lip and shoots vertically upward through the nose and eye to the vertex should be regarded with suspicion, and the diagnosis of true trigeminal neuralgia made with reservation. The second and third divisions are most usually involved, in our series, with equal frequency. Both second and third divisions were implicated six times. With regard to the ophthalmic division, injection was used but once in this series. Open avulsion under local anesthesia with the incision placed in the eyebrow, thus leaving no visible scar, is a simple and effective method of dealing with supra-orbital neuralgia. It has seemed much easier to avulse the nerve than to inject it. The supra-orbital foramen may be extremely difficult to enter with the needle, particularly if the supra-orbital ridge is prominent and the opening well hidden by a projecting bony shelf.

Local anesthesia should be used in all trigeminal injections. The only definite indication of the penetration of the nerve trunk by the needle is pain referred to the peripheral distribution of the nerve. The skin should be well infiltrated with procain, but no more anesthetic employed until the patient's reaction shows that the nerve is reached. If the deep tissues about the nerve are filled with procain, enough of the solution may pass into the nerve trunk to deaden sensation momentarily, in which case it will be very difficult to determine the penetration of the nerve by the needle.

* From the Clinic of Dr. Charles H. Frazier, University Hospital.

1. Frazier, C. H.: S. Clin. N. A. **1**: 101 (Feb.) 1921.
2. Grant, F. C.: Anatomic Study of Injection of Second and Third Divisions of Trigeminal Nerve, J. A. M. A. **78**: 794-797 (March 18) 1922.

Once the nerve is pierced, procain may be injected into it or the patient lightly anesthetized with gas-oxygen anesthesia before the 95 per cent. alcohol is injected. Not more than 0.75 c.c. of alcohol should be used, as the nerve trunk will not absorb a larger quantity.

The criteria by which the effectiveness of an injection is judged are the pain of which the patient complains when the needle enters the nerve, and complete peripheral anesthesia to pain in the distribution of the nerve following the injection of the alcohol. No injection should be considered successful unless the peripheral anesthesia is absolute.

There have been no serious complications as a result of these injections. None should be anticipated if the needle is not allowed to penetrate too far. Occasionally the side of the face becomes swollen, but this is controlled by immediate application of iced compresses. In one case there was a corneal ulcer after infiltration of the entire ganglion, which occurred unexpectedly following a successful third division injection. Complete peripheral anesthesia resulted in all three divisions, and the ulceration appeared in twenty-four hours. It cleared up subsequently under appropriate treatment. In three other cases all three divisions were affected following effective third division injection. No corneal complications resulted. A temporary facial weakness was observed once. In the anatomic room it has been noted that the ganglion may be injected through the foramen rotundum in a large percentage of cases.

Fig. 2.—Injecting third division of fifth nerve from 2 centimeter mark; method of measuring angle (90 degrees) with protractor in the horizontal plane.

In this series of injections, in the attempts made to reach the third division for the relief of neuralgia, thirty-three were successful and twelve failed, at the first attempt. In every patient who returned for subsequent injection, the nerve was eventually reached. Eight injections of the third division were made in the presence of a malignant growth. Five were successful, and three unsuccessful. In the cases in which the neoplastic tissue has infiltrated the cheek, distortion of normal relationships may occur; it may be impossible to open the jaw, and accurate injection is much more difficult. Including all cases of third division injections, numbering fifty-four, thirty-nine were successful, and fifteen failed at the first attempt, a rate of failure of 28 per cent. The average angle in the vertical plane was 105 degrees, and in the horizontal plane 90 degrees; the average penetration was 4.75 cm. All third division injections were made from the 2 cm. mark. In the second division series, forty injections were performed: thirty-eight for neuralgia, and two for carcinomatous degeneration. Of the thirty-eight injections for neuralgia, thirty-one were successful, and seven unsuccessful in the first instance, an average of 18.6 per cent. of failure. Both injections for relief of pain consequent to malignant change were effective. In forty injections of the maxillary division, seven were failures, an average of 17.5 per cent. All second division injections were made from the 3 cm. mark; the average angle in the horizontal plane (before backward) was 98 degrees, in the vertical plane (above downward), 112 degrees. The nerve was reached from 5 to 5.5 cm. from the skin surface. While we have no carefully recorded series of cases treated by injection before the introduction of this more exact technic, there is nevertheless a very strong feeling that hitherto if a success was scored in 50 per cent. of our cases it was satisfactory. In this series of cases, small though it is, the percentage of successful injections has been markedly raised. As the number of cases increases and careful records are kept of the horizontal and vertical angles and depth of penetration, it will be possible to give even more exact directions for accurate infiltration of these nerve trunks.

CONCLUSIONS

1. Alcohol injections of the three divisions of the trigeminal nerve are of much value in treatment of tic douloureux, as an adjunct to the treatment of painful growths about the face, tongue and jaws and in masseter spasm.

2. By the use of the zygometer and protractor, an attempt has been made to render more accurate the description of the technic for injecting the maxillary and mandibular divisions of these nerves.

3. Clinical experience has coincided with anatomic studies. Injections of the maxillary division should be made from the 3 cm. mark. The needle should subtend an angle of 100 degrees from above downward in the horizontal plane, and 115 degrees from before backward in the vertical plane. The nerve is reached from 5 to 5.5 cm. from the surface.

4. Injections of the mandibular division should be made from the 2 cm. mark. The needle should subtend an angle of 90 degrees in the horizontal plane and 110 degrees from above downward in the vertical plane. The nerve is reached from 4.5 to 5 cm. from the surface.

5. By applying these facts to a series of injections clinically, the percentage of failures to reach the nerve trunks has been materially reduced.

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Syphilitic Interstitial Pneumonia.—The reasons for thinking this interstitial pneumonia syphilitic are: (1) the presence of typical syphilitic stenosis of the rectum and probable syphilis of the liver in the same body; (2) the situation of the interstitial pneumonia in the lower lobe, the presence of multiple white foci with radiating bands, without necrosis or calcification; (3) the enormous growth of vascular interstitial connective tissue containing many round cells in foci and perivascular concentrations.—R. Floyd, *Proc. New York Path. Soc.* **21**:64 (Jan.-May) 1921.

A TEST FOR DIPHTHERIA IMMUNITY AND SUSCEPTIBILITY

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A method of testing the blood for the presence of diphtheria antitoxin has been devised, which is quantitatively accurate, and in this respect superior to the Schick test; also, it has the further advantage that it is applied at a central laboratory on blood which can be sent long distances by mail.

The greater accuracy of this method over the Schick test can best be shown by first reciting some of the difficulties inherent in the Schick test.

Diphtheria toxin is subject to a progressive loss in its toxic power. The rate at which this deterioration takes place varies with the age of the toxin and the conditions of light and temperature under which it is kept, but it is always progressive and continuous. There is not, however, a corresponding loss in its combining value with antitoxin.

The accuracy of dosage is such an important factor that it is essential in the Schick test to use a very recently standardized and carefully kept toxin. A further inconvenience is the necessity of making dilutions on the day they are to be used, as the deterioration of diluted toxin is only a matter of hours. The process of accurately finding the minimal lethal dose of a toxin is so tedious, and so many guinea-pigs are required, that only the most conscientious manufacturers put out a reliable product.

These difficulties with toxin probably account for more variation in Schick test results than do faulty readings from inexperience and the occurrence of pseudoreactions.

There is another reason for aberrant results when the toxin is above suspicion and the operator is experienced, which may possibly be more than theoretical. The proportion of toxic units to combining units in toxins varies, no two being alike. If the toxin used is of a low minimal lethal dose value in proportion to its L + value, it may contain so much toxoid, which has as great an affinity for antitoxin as the true toxin, that a false positive reaction could result, which would be thus explained:

According to Schick, $\frac{1}{30}$ unit of antitoxin per cubic centimeter of the patient's blood is necessary before the $\frac{1}{50}$ minimal lethal dose of toxin used in the test is neutralized sufficiently to prevent a reaction. If $\frac{1}{30}$ unit is all the patient possesses, and the toxin used is so low in toxin units that the minimal lethal dose contains sufficient binding units to absorb twice that amount, it is conceivable that the antitoxin in the patient's blood, although sufficient to protect him ($\frac{1}{30}$ unit) is bound by the toxoid fraction of the toxin to such an extent that free toxin elements are left uncombined, thus giving a positive reaction which would be interpreted falsely.

Fig. 1.—Varying degrees of reaction with varying amounts of antitoxin in the serum: The central lesion represents exactly $\frac{1}{50}$ unit of antitoxin. The lesion showing necrosis had the antitoxin diminished by $\frac{1}{100}$ unit per cubic centimeter of serum, and the lesion showing only the needle puncture had the antitoxin increased by $\frac{1}{100}$ unit per cubic centimeter.

It is hoped, in a future communication, to give the results of experiments verifying or disproving the foregoing contention. For the present, it is considered sufficient that the fault, if it exists, is, with the others mentioned, met by the test herein described.

Pseudoreactions in the Schick test, due to protein hypersensitiveness, are common and the source of much confusion in the hands of those whose experience in the application of the test is limited. Children with a moderate degree of protein sensitization and a sluggish reaction from it, and with an antitoxin content barely sufficient to give a negative reaction when all conditions are favorable, will give reactions that cannot be satisfactorily read by the most expert.

In the new test, advantage is taken of the fact that the skin of the guinea-pig is sensitive to the minutest amount of diphtheria toxin, and, as shown by Römer,[1] the results of intracutaneous injections of this substance are far more uniform in different animals than are the effects of subcutaneous injections.

This uniformity of intracutaneous reaction, regardless of the weight of the guinea-pig, is one of the features of the intracutaneous virulence test with throat cultures, as developed by Force and Beattie,[2] which method has proved so far superior to subcutaneous inoculation that it has been adopted as the standard method of the California State Hygienic Laboratory.

Zingher [3] has used a modification of Römer's technic for the estimation of the antitoxin content of serum; but, so far as I have been able to find, no one has suggested a modification of Römer's method for replacement of the Schick test in routine work.

One three-hundredth minimal lethal dose of toxin will produce a definite sharp reaction characterized by redness with some induration about 15 mm. in diameter, reaching its height in forty-eight hours and subsiding without necrosis. The reddened area fades quickly to a brownish color, and there is some furfuraceous scaling of the skin.

The smallest amount of toxin that will produce a definite necrosis of the skin is about $\frac{1}{40}$ minimal lethal dose. In the test, a predetermined strength of toxin is mixed with an equal volume of blood serum from the person to be tested, the mixture allowed to stand for half an hour at room temperature, and then 0.2 c.c. of the mixture is injected intracutaneously into the shaved skin of a white guinea-pig. The toxin used is standardized so that the amount contained in 1 c.c. is one thirtieth of the L + dose.

Since the L + dose of toxin is the amount that will neutralize one standard unit of antitoxin, leaving 1 minimal lethal dose of toxin free, it follows that 1 c.c. of one-thirtieth the L + dose mixed with 1 c.c. of serum containing $\frac{1}{30}$ unit of antitoxin will leave a balance of $\frac{1}{30}$ minimal lethal dose, and 0.1 c.c. of each will have a surplus of $\frac{1}{300}$ minimal lethal dose of toxin. The volume of mixture injected, 0.2 c.c., therefore,

1. Römer: Ztschr. f. Immunitätsforsch. **3**: 344, 1909.
2. Force, J. N., and Beattie, M.: An Intracutaneous Test for the Virulence of Diphtheria Bacilli in Field Cultures, to be published.
3. Zingher, Abraham: A Modification of Römer's Intracutaneous Method for the Determination of Small Amounts of Diphtheria Antitoxin in Blood Sera, J. Infect. Dis. **19**: 557-564 (Oct.) 1916.

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represents one three-hundredth of the L + dose of toxin, plus whatever antitoxin may be in 0.1 c.c. of the serum.

The reading is made in from forty-eight to seventy-two hours.[4] If the serum tested contains exactly $\frac{1}{30}$ unit of antitoxin per cubic centimeter, the amount stated by Schick as being the minimal protective amount, $\frac{1}{300}$ minimal lethal dose of toxin, will be free in the mixture and produce the reaction as noted above.

If the amount of antitoxin is greater, even by so small a margin as $\frac{1}{100}$ unit, no reaction will appear. If the amount of antitoxin is less than $\frac{1}{30}$ unit, even as much less as $\frac{1}{100}$, superficial necrosis will be plainly evident.

The reason for the sharpness of these differences with such small amounts of antitoxin can be appreciated when it is recalled that the L + dose of toxin (which just kills a 250 gm. pig when mixed with 1 unit of antitoxin) may contain more than 100 minimal lethal doses.

In the particular toxin used in the work on which this paper is based, there were 57 minimal lethal doses in the L + dose. This means that $\frac{1}{100}$ unit will almost neutralize 0.57 minimal lethal dose of toxin, and that 0.1 c.c. of a serum containing $\frac{1}{100}$ unit will neutralize 0.057, or $\frac{1}{17}$, minimal lethal dose.

A variation of $\frac{1}{17}$ minimal lethal dose one way or the other from the $\frac{1}{300}$ required to produce a definite reaction produces either necrosis or absolute lack of reaction, as the case may be. Figure 1 shows these three grades of reaction very distinctly. Figure 2 shows three actual tests with serum from three members of the laboratory staff. Between the two positive reactions is one negative showing no redness at all, indicating more than $\frac{1}{30}$ unit of antitoxin.

Fig. 2.—Three tests with human serum: A negative reaction (more than $\frac{1}{30}$ unit of antitoxin per cubic centimeter) is shown between two positive reactions. In the center of the red areola (to the left) a white area of necrosis is visible.

The extreme delicacy of reaction in this test, plus the fact that the guinea-pig is never sensitive to the proteins of diphtheria toxin, mean that the test is absolutely clear cut, definite, certain, and free from all confusing pseudoreactions. The great usefulness of the test, aside from its superior accuracy, lies in the fact that it is performed in the laboratory, blood specimens being sent in the same as for the Widal test. The technical difficulties in the application of the Schick test have militated against its use by physicians for occasional cases, and its principal use has been by those especially equipped, and particularly for the testing of large groups of children. The experimental work leading up to the conclusions expressed above was conducted with a standardized antitoxin from the Hygienic Laboratory of the United States Public Health Service. The method has been applied to the testing of a number of persons, some of whom had given unsatisfactory Schick tests, and the results were satisfactory in all respects.

The California State Hygienic Laboratory has added the test to its activities, and special outfits for the collection of the few drops of blood required are being distributed.

4. A reading can be made in twenty-four, or even in twelve hours, when the serum tested has a marked increase over the 1/30 unit giving the standard reaction, for in this case no redness will be evident except a very small spot at the side of the needle puncture. Also, if the serum contains much less than the 1/30 unit, the result may be read as early, for in this case a small, white spot of beginning necrosis will be visible in the center of the red area, which is likely to be as large as from 20 to 25 mm. in diameter. With serum containing no antitoxin, the necrosis is severe in proportion to the ratio between L + dose and minimal lethal dose strength of the toxin used. In a later article the result of tests to perfect the technic in such a manner as to avoid severe reaction in the guinea-pig, and thus enable more tests to be applied to a single animal, will be given.

CHANGES IN FINGER NAILS AFTER RHEUMATIC FEVER AND TUBERCULOSIS *

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Since the time of Hippocrates, and perhaps before, postinfectious changes in the finger nails have interested clinicians. The nails are extremely sensitive to slight nutritional variations. Their manner of reaction may be very different. There are those older clinicians who have gone so far as to say, "Show me your nails and I will tell you whether you have passed through many infectious diseases." [1] Leon Parisot [2] aptly said that the nails and the skin are mirrors which reflect the disturbances of nutrition which fever and constitutional diseases have produced in our organism. "Show me your nails, and I will tell you who you are." While this assertion is by no means entirely true, it expresses well the hypersensitiveness of the nails to disease.

Changes in the nails have been described as following practically every disease. It might be well before proceeding to the substance of this paper to relate the course of events which led to these observations. The observations cover a period of more than eighteen months. The work was started at the Johns Hopkins Hospital in Baltimore and completed in the Pirquet Kinder-Klinik in Vienna.

I noted that, following acute rheumatic fever, the finger nails showed small depressions in the nail plate. These depressions for the most part presented a punched-out appearance. Their size varied from that of a pin point to that of a pin head. Some depressions were very superficial, and others were deep. They moved forward with the growth of the rest of the nail, and finally disappeared. They were generally distributed over the surface of the nail plate. Their arrangement presented no regular pattern. The depressions occurred with equal frequency on the nails of the two hands, most frequently on the index and ring fingers. Their number varied from one to ten, reaching in extreme cases, as high as twenty-two on each nail, the average number being from two to four.

* From the Medical Department of the Johns Hopkins Hospital.

1. Heller, Julius: Die Krankheiten der Nagel, Berlin, Hirschwald, 1900.

2. Quoted by Heller (Footnote 1).

These changes were observed early following an attack of acute rheumatic fever in five cases, and late, namely, after nine years, in one case. All of these cases were characterized by the association of cardiac changes (endocarditis, etc.). These observations then led to a comparative study of the nails of normal persons and of those who had had acute rheumatic fever or chorea (rheumatic conditions—Cheadle's cycle). The object of this work was to determine the relationship of these nail changes to the rheumatic diseases. The observer, without knowing the history or diagnosis of any patient examined, made observations in the medical wards of the Johns Hopkins Hospital, in order to obtain statistics concerning the occurrence of these depressions (holes, stippling, pocking of the nails). At a later date those patients, in the medical or pediatric services, with a history or diagnosis of rheumatic fever or chorea, were selected for further observations.

RESULT OF OBSERVATIONS

When the diagnosis of those patients examined and the nail changes found were compared, it was discovered that of the 100 patients without a history of rheumatic fever, without cardiac changes, only four, or 4 per cent., showed the characteristic depressions (two patients, one each; one patient, two, and one patient, three); in marked contrast, of the twenty-two cases with a positive history of rheumatic fever or chorea, eighteen showed these changes in the nails to a greater or less degree (81.9 per cent.). Two of the negative cases were seen in the early stages of rheumatic fever at a time too early to expect the nail changes to be manifest.

Fig. 1 (W. R., man, aged 24).—Ring finger of right hand; patient had rheumatic fever ten years before observations; depressions disappeared for three months to recur following an attack of grip. Typical depressions, varying in size and depth, scattered diffusely over the nail plate.

These nail changes are not apparent earlier than from six to seven weeks after the onset of acute rheumatic fever (in exceptional cases in five weeks), as it takes this length of time for nail changes occurring in the root to grow forward sufficiently to be observed on the visible portion of the nail plate. In one of the negative cases of the foregoing group the patient had had an attack of acute rheumatic fever thirteen years previous to observation, and in the other, three years before. Considering two of the cases observed as too early for the nail changes to be apparent, we are justified in omitting these cases from our consideration, leaving eighteen positive cases out of the twenty, or 90 per cent.

These facts were most suggestive, and further observations were then made. It should be mentioned that the material examined at the Johns Hopkins Hospital at this time did not afford a sufficiently good opportunity adequately to study the nail changes that occur after active tuberculosis, smallpox and other diseases that may lead to such nail changes. Hence, it was thought at this time that these changes were nearly conclusive in indicating previous acute rheumatic fever, chorea or some of Cheadle's cycle, particularly when cardiac changes were present. At the end of a year's period of observation this view was somewhat modified. I then believed that these changes in the finger nail occurred with greatest frequency following the rheumatic fever, chorea group, but that they also infrequently occurred in a small number of patients with no history of rheumatic fever. I had seen these nail changes following some cases of typhoid fever, scarlet fever, empyema, tuberculosis, etc. It was felt, however, that the presence of these depressions in a given case of endocarditis pointed to rheumatic fever as the most probable etiologic factor.

It was my good fortune, while at the Pirquet Kinder-Klinik in Vienna, to see several children with definite cardiac lesions who gave a history of rheumatic fever, and one child with a history of chorea. All of these patients showed the characteristic changes most clearly. When this work came to the attention of Prof. B. Schick he remarked that such depressions had been observed by him some years before in children with active tuberculosis. Their frequency suggested to him the possibility of their being characteristic of tuberculosis (and perhaps might be the result of tubercle formation in the nail root). After a period of observation, Professor Schick noted that these depressions in the nails occurred not infrequently with conditions other than tuberculosis. His opinion, therefore, is that these changes could not be used as a specific diagnostic sign for certain diseases. He suggested that observations of the nails of children in the pavilion for tuberculosis of the Pirquet Klinik be undertaken. The nails of sixty-five children in the pavilion for tuberculosis were examined, of which number more than 70 per cent. showed pocking or depressions.

ANATOMY OF THE NAILS

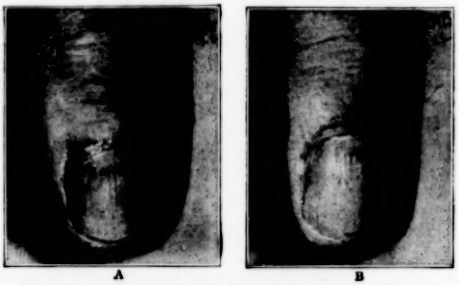
The nails are the corneous plates which cover the dorsal surface of the terminal phalanx of the fingers and the toes. The entire nail is not to be seen, the central (posterior) and lateral portions being hidden from view by the overlying skin. Proximal to the visible nail plate, the nail continues concealed from the naked eye as far as the proximal end of the terminal phalanx, at which point the nail begins. The concealed central (posterior) portion is called the nail root (radix unguis); the visible anterior portion, the nail body or nail plate (corpus unguis). That portion of the skin which lies immediately under the nail body is the nail bed (solum unguis). The nail bed runs without lines of demarcation into the skin of the finger tips. The fact that a portion of the nail is concealed (the central portion, radix unguis) is most important, as it is evident that changes brought about by alterations of the germinal epithelium of the nail root will not be seen until a sufficient amount of time has elapsed for growth to take place from the central end of the terminal phalanx, where the changes are first present to the visible portions of the nail plate. The matrix is that portion of the nail bed which lies under the white portion of the nail plate. Its distal end coincides with the convex line of the lunula, where the

nail wall covers part of the posterior portion of the nail plate, resulting in a white convex bowing over the base of the nail plate. It is generally accepted that the matrix can produce normal nail substance. That the nails are supplied by nerves is well known.[1]

PHYSIOLOGY OF THE NAIL

Normally, the nail grows on the average of 1 mm. in ten days (i. e., in one day 0.1 mm.).[3] The growth is most rapid in adults, and slowest in old age,[2] and more rapid in summer than in winter.[1] Berthold[4] found that normally the nails on the right hand grew more quickly than the nails on the left hand. It is well known that nail growth is often diminished in acute infections (conditions with fever), a process similar to the cessation of the growth of hair in the course of or following some infections. A physician reported to me that, subsequent to an attack of acute rheumatic fever at the age of 45, he had noted the cessation of the growth of one of his finger nails for more than a year.

On the average, according to various authorities, the nail completely renews itself in 105 or 106 days.[5] However, I found the average size of the nail of the adult to be 13 mm. Accepting that the nail grows 1 mm. in ten days, it should take 130 days for the nail to be regenerated, if the nail is of normal size. In small children the rate of growth found was 0.64 mm., and in older children 0.84 mm. in ten days.[5] Since the nail of the child is smaller than that of the adult, one can readily understand why the nails are regenerated within from eighty to ninety-six days[6] in the child, and in from 120 to 132 days in the adult, despite the slower rate of growth given by Dufour.



A B

Fig. 2 (R. R., boy, aged 11, Johns Hopkins Hospital).—Patient had acute rheumatic fever six months before observations; at present, subacute bacterial endocarditis. *A*, Thumb of left hand: Small depressions arranged in horizontal rows; incomplete lengthwise furrows. *B*, Big finger, right hand: Many very small and superficial depressions; also complete and incomplete lengthwise furrows.

Schick[6] found that the period of appearance of the physiologic transverse furrow of the newly born was on about the thirty-seventh to the fortieth day after birth. The thirtieth day was the earliest and the ninth week the latest time of appearance. The average duration of the period that the transverse furrow was visible was fifty days; in an exceptional case its duration was 100 days. These observations have both a practical and a medicolegal interest. An infant with a transverse furrow of the finger nail which is located 1 mm. from the proximal end of the visible nail plate is at least 28 days old, and is apparently not older than 9 weeks.

CHARACTER OF THE NAIL CHANGES

Small depressions, superficial for the most part, varying in size from that of a pin point to that of a pin head, are seen in the nail plate. These depressions appear punched out, as if a curet had scooped out small areas (Figs. 1, 2, and 3). The depressions are usually deepest in the center, with slightly sloping sides. They most frequently occur scattered diffusely over the nail plate with no regular arrangement, but they may also occur in horizontal and longitudinal rows (Figs. 2 and 3). These all grow forward with the nail plate and are eventually cut off. They may be found in large numbers (twenty-two) in a single nail, or there may be only a single depression.

These depressions may occur on all of the fingers, but have special preference for the index and ring fingers. Their frequency is as great on the right hand as on the left. These changes can also be observed on the toe nails; but they are much less distinct, largely owing, probably, to the use of shoes. However, that the wearing of shoes is not the sole causal factor in obscuring the changes in the toe nails is shown by the fact that the physiologic horizontal furrows seen in the newly born are not to be seen distinctly on the toe nails.

I have never found these depressions or stippling or pocking of the finger nails before five weeks have elapsed after the onset of acute rheumatic fever, chorea, etc. This period corresponds to the time required for the growth of that portion of the affected unguis beneath the skin, so that the injury to the nail germinal tissue can be seen. This time relationship makes it extremely probable that the injury to the nail is dependent on the acute rheumatic fever or chorea. These depressions may appear much later, depending on the time of onset of the damage to the nail germinal tissue, and the rate of growth of the nail. They may remain stationary on the nail plate, if temporary cessation of nail growth takes place. Since normally it takes from 120 to 130 days for the nail to be completely regenerated, these depressions should disappear about this time if nail growth is not retarded.

Depressions have been seen in patients who have had acute rheumatic fever five, eight, ten and even fifteen years previously. One may observe these depressions for a period of months and years, and then suddenly they may disappear, not to return again, or to reappear at some subsequent time. I had the opportunity of seeing these depressions disappear entirely in a patient in whom they had been very marked, and then recur to a marked degree three months later following an attack of grip (Fig. 1). I have noted the depressions appear after rheumatic fever in patients whose nails I had inspected and found unmarked before the onset of the acute illness.

Virchow[7] described similar circular depressions appearing as if punched out deep in the nail folds.

3. Dufour, L.: Bull. Soc. Vaudoise d. sc. naturelles **11**, 1872. Schick, B.: Jahrb. f. Kinderh. **67**, 1908.
4. Berthold, A. A.: Verhandl. d. Göttingen gelehrten Gesellsch., 1850.
5. Dufour (Footnote 3).
6. Schick (Footnote 3).
7. Virchow, Rudolf: Cellular Pathology, 1860, translation by Chance, London.

These occurred in smallpox when the pocks developed in the nail folds.

Heller [1] saw small furrows in the posterior third of both thumbs of a man, aged 30, with acute rheumatic fever. These furrows did not extend over the entire breadth of the nail plate, but were situated in the center of the nail plate with a breadth of from 2 to 3 mm. These furrows of Heller fall into the third group of the classification given below. These are the only two references in the literature in which I found a description at all like that of the depressions here given.

Other nail changes of importance occurring in association with depressions in the nail are:

1. *Transverse grooves or horizontal furrows.* These are particularly common in active tuberculous disease, and less frequent in the rheumatic fever group; they are common following scarlet fever,[8] and have been described following measles, typhoid, atrophy (decomposition), pemphigus [9] and congenital syphilis.[10] One should not fail to mention the physiologic transverse furrows of the newly born.[6] Recently I had the opportunity of observing transverse furrows in the finger nails following epidemic (lethargic) encephalitis.

2. *Lengthwise grooves or longitudinal furrows.* These are not uncommon in the rheumatic fever group and tuberculous disease, and also following many acute infectious diseases.

3. *Incomplete or transitional group.* These are incomplete lengthwise and transverse furrows varying in size. A case described by Heller corresponds to the incomplete transverse furrow group. They are seen commonly in the rheumatic fever group (Fig. 2) and tuberculous disease (Fig. 3).

4. *Deformity of the nail, clubbing, etc.* These may be associated in both disease groups.

Fig. 3 (H. D., girl, aged 15, Pirquet Klinik).—Thumb of right hand. Patient had had pulmonary tuberculosis with cavity formation for one year; horizontal row of depressions, some of sufficient breadth to belong to the group of incomplete transverse furrows. (Reproduction from moulage made in Vienna.)

CLASSIFICATION OF CHANGES

Hypothetically, one may classify the changes that occur in the nail root so as to explain easily the various alterations in the nail plate that have been described:

A. General diffuse injury to the nail germinal epithelium of short duration.

B. Focal or local punctate injury to the nail germinal epithelium of short duration.

C. Focal injury to the nail germinal epithelium: (*a*) of long duration; (*b*) of permanent duration.

D. General diffuse injury to the nail germinal epithelium: (*a*) of long duration; (*b*) of permanent duration.

E. Tendency of diffuse or focal (punctate) injury of short or long duration to recur (on basis of locus minoris resistentiae).

A. *General Diffuse Injury to the Nail Germinal Epithelium of Short Duration.*—The nail bed is thrown out of normal function across its entire breadth. The result is that, for a very short period of time, the germinal epithelium does not function normally, and, during this period of dysfunction, produces inferior and thinner nail substance. When the nail substance is again produced normally, this period of dysfunction is represented on the nail plate by a transverse groove, proximal and distal to which is normal nail substance. The breadth of the groove depends on the length of time that the germinal epithelium is thrown out of function.

B. *Focal, Local, Punctate Injury to the Nail Germinal Epithelium of Short Duration.*—Wherever there is an area of germinal epithelium thrown out of function for a short period of time, that area of the nail plate which is produced by the injured portion is inferior and thinner in quality than the remaining nail substance which is being produced by normal uninjured germinal epithelium. The result is a small depression or pit in the nail. But if the injury is more widespread, the result is a short, horizontal groove. Dependent on the size of the injury is the production of depressions or grooves.

C. *Focal, Punctate Injury to the Nail Germinal Epithelium.*—(*a*) Of Long Duration: Here it is easy to see that the resulting change in the nail plate will be a longitudinal or lengthwise groove, as the injury is in only one portion of the nail root, and this area alone is thrown out of normal function, while the other portions of the germinal epithelium are functioning efficiently. It need not be mentioned that one may see all degrees of change between a focal injury of fleeting and one of long duration, according to the duration of which one will find a depression in the nail plate, a short longitudinal groove or a complete longitudinal groove.

(*b*) Of Permanent Duration: The result is a permanent longitudinal groove.

D. *General Diffuse Injury to the Nail Germinal Epithelium.*—(*a*) Of Long Duration: The result is first the appearance of a horizontal furrow due to the line of demarcation between the normal and thinner nail substance, with its final disappearance and the formation of an inferior and deformed nail.

(*b*) Of Permanent Duration: The result is the scar and permanent malformation of the nail.

E. *Tendency of Diffuse or Focal Injury to Recur on Basis of Locus Minoris Resistentiae.*—For example, the recurrence of the depressions following grip in a rheumatic fever case. I have previously mentioned the fact that these depressions disappear to reappear. My interpretation is that a certain area of the germinal epithelium of the nail root is thrown out of function temporarily. This is represented by a small depression if, after a short interim, the injured area is able to produce comparatively normal nail. However, a locus minoris resistentiae exists which may react to slight nutritional disturbances of the nail (infectious, circulatory, toxic, trophic, embolic, internal secretory, nervous, etc.). The spot of recovered function is again

8. Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, Ed. 2, **2**: 145.
9. Swoboda: Tr. Gesellsch. f. inn. Med. u. Kinderh., May, 1907.
10. Hochsinger: Tr. Gesellsch. f. inn. Med. u. Kinderh., May, 1907.

unable to perform its work properly, and one finds either a recurrence of depressions and transverse grooves, or the production of longitudinal furrows.

It is well known that rheumatic fever, chorea and tuberculosis are diseases in which relapses and recrudescences frequently occur. It is in just these diseases, therefore, that one would expect to find most frequently recurring changes in the nails.

It should be emphasized again that these changes are found in active tuberculous disease. They are not found in tuberculous infection without active disease. It is interesting to note that Heller, in discussing the changes in the nails following tuberculosis, does not mention the depressions described here.

The observations on which this study is based were made in more than 300 cases. Sixty-five of the patients had active tuberculosis (70 per cent. positive). Two hundred patients, without rheumatism or active tuberculosis, served as controls, with nine positive changes (4.5 per cent.). Of thirty-three patients with a history of rheumatic fever, more than 90 per cent. showed these depressions. Of eight patients with chorea, 100 per cent. had these changes. The pocking was found in one case of Hodgkin's disease, two cases of subacute bacterial endocarditis (perhaps the old valvular lesions were rheumatic in origin), following scarlet fever, empyema, thromboangitis obliterans and heart block. A small number was found in which the origin of the changes was obscure. The possibility exists that these patients had passed through abortive, unrecognized forms of rheumatic fever or active tuberculous disease.

As to syphilis, a large number of control patients were studied from Ward M of the Johns Hopkins Hospital, where the incidence of this disease is very high. In this group no depressions were found.

Examinations of the capillaries of the nail bed of selected patients from this group by the method used by Lombard,[11] Weiss,[12] and Danzer and Hooker [13] revealed no characteristic alterations.

PATHOLOGIC EXAMINATION OF THE NAIL

In only one case were sections of the nail studied. Macroscopically, there was a depression in the nail bed immediately beneath the depression in the nail plate. It would not be justifiable to venture an opinion on the histologic study of one case. At a later date I hope to undertake a thorough histologic study of the changes.

One must be careful not to forget that trauma may produce most unusual changes in the nail. Whenever a history of trauma to a nail was obtained, the case was eliminated from the series. Manicuring of the nail often affects the nail root as well as the nail plate and nail bed. It is important, therefore, to secure information as to whether the patient's nails are frequently manicured.

COMMENT AND CONCLUSIONS

1. Small, circumscript depressions (pocking, stippling) occur in the nails following acute rheumatic fever and chorea in approximately 95 per cent. of the cases, particularly when heart complications are present. These changes are temporary and may disappear, to reappear after a recurrence of the same disease or some other infectious disease. One may see these changes as late as fifteen years after the last attack of rheumatic fever. These changes do not appear, as a rule, before six weeks have elapsed after the patient is taken ill, and often appear at a later date. The earliest time of their appearance is five weeks. These depressions are not infrequently associated with horizontal furrows, most often incomplete, and are not uncommonly seen together with lengthwise furrows, complete and incomplete.

The nails of all patients with heart disease (endocarditis, etc.) should be examined for these changes. It is felt that these changes, occurring in the absence of active tuberculous disease and with an associated heart lesion, are confirmatory, though not definite evidence, that the patient has passed through an attack of acute rheumatic fever or chorea, and that a heart lesion, if present, is probably rheumatic in origin. Several cases of valvular disease of undetermined etiology have shown these changes.

CHANGES IN NAILS OF VARIOUS GROUPS OF PATIENTS

	Number of Patients	Changes		Percentage Showing Changes
		Positive	Negative	
1. Definite history and diagnosis of acute rheumatic fever; nails examined 5 weeks or more after onset	33	31	2	93.9
2. Definite history of rheumatic fever; nails examined before 5 weeks after onset; no further observations	4	0	4	0
3. Definite history and diagnosis of chorea; nails examined 5 weeks or more after onset	8	8	0	100
4. Definite history and diagnosis of chorea; nails examined before 5 weeks after onset; no further observations	4	0	4	0

5. Possibility of rheumatic fever:	Number	Positive	Negative
(*a*) Aortic insufficiency without syphilis.	1	0	1
(*b*) Mitral insufficiency	1	0	1
(*c*) Pericarditis, unknown etiology	1	1	0
(*d*) Subacute bacterial endocarditis	3	2	1
(*e*) Heart block, boy, aged 11 years	1	1	0
Total	7	4	3

Percentage showing changes, 57.1

5. Conditions other than rheumatic fever group and tuberculosis:	Number of Cases
Scarlet fever	2
Hodgkin's disease	1
Empyema	1
Typhoid	1
Following trauma	6
Thromboangitis obliterans	1

	Number of Patients	Changes		Percentage Showing Changes
		Positive	Negative	
7. Active tuberculous disease	65	46	19	70.8
8. Control group	200	9	192	4.5
Total number of cases in Groups 1 and 3				41
Total number of cases in Groups 1 and 3 showing positive nail changes				39
Percentage of rheumatic fever-chorea group (seen 5 weeks after onset of disease) showing positive changes				95.1

2. These changes also occur in active tuberculosis in 70 per cent. of the cases, but they are often associated with transverse and longitudinal grooves and clubbing of the finger nails.

3. The depressions have been found in 4.5 per cent. of control cases in which no definite etiology could be ascertained, and they have also been found occasionally after a variety of diseases, such as scarlet fever, smallpox, empyema, typhoid and Hodgkin's disease.

1515 Eutaw Place.

11. Lombard: Am. J. Physiol. **29**: 335.
12. Weiss: Centralbl. f. Physiol. **28**: 1375, 1914.
13. Danzer, C. S., and Hooker, D. R.: Am. J. Physiol. **52**: 136 (May) 1920.

The London Foundling Hospital.—The old Foundling Hospital in London, made famous by Dickens and other writers, is soon to be moved from the present site in central London to a less expensive location.

OBSERVATIONS ON THE USE OF MILK INJECTIONS IN THE TREATMENT OF CHRONIC ARTHRITIS

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Having been struck with the inefficacy of the various types of treatment in many cases of chronic arthritis, and having sought in vain to relieve those patients who had followed the usual procedures, as removal of foci of infection, diet, electrotherapy, hydrotherapy and salicylate therapy, with little or no avail, I turned to the use of foreign proteins parenterally, and treated a series of such patients with the injection of milk intramuscularly, and have made certain observations.

These observations include, in all, fifty patients, with a total of 135 injections. They are not selected cases, excepting that certain requisites were laid down before beginning treatment: that (1) no case should have had a duration of less than six months, or longer than five years; (2) the deformity, swellings and interference with function should be but slight or moderate, as it would be unfair to judge in marked or hopeless cases, and (3) no other treatment should be attempted during the period of observation. Many of these patients had previously had various suspected foci of infection removed—apical abscesses, tonsils, etc.—but many had such suspected foci as metritis, salpingitis, appendicitis, cholecystitis and colitis, which required further operation or treatment, and which for one reason or another they were wont to neglect. During the course of this treatment and observation no attempt was made further to attack these foci or to administer any other medication.

PREPARATION OF THE MILK AND ADMINISTRATION

The milk was prepared by heating in a closed vessel at 100 C. (in boiling water) for twenty minutes. By excluding the air in the container, no film of caseinogen formed, and to further insure ease of administration the milk was filtered (although this was unnecessary). The dose administered was from 4 to 6 c.c. for the first injection, from 5 to 8 c.c. for the second, and from 7 to 10 c.c. for the third, fourth or fifth injection. Usually two or three injections were administered to a patient, and if of no value, the treatment was discontinued after the second or third injection. Five patients received five injections. The interval between injections varied from three to seven days, depending on the reaction. The site of administration was deep into the buttock, prepared in the usual manner.

TABLE 1.—DISTRIBUTION OF INJECTIONS

Number of Cases	Number of Injections	Total Number of Injections
5	5	25
5	4	20
10	3	30
30	2	60
Total 50		135

THE REACTION

Following about half of the injections, especially the smaller ones, little or no reaction occurred. When the reaction did occur, it would begin to manifest itself in from six to twelve hours, and on three occasions did not commence until twenty or twenty-four hours later. It consisted of the picture so well described by Peterson, Schmidt and Koznelson, and others—chills, fever, headache, depression, nausea and vomiting. On six occasions the fever and malaise persisted for five days (and incidentally these patients later showed the most marked improvement).

RESULTS

Following the disappearance of the reaction, in practically all cases, there appeared a certain euphoria and feeling of well-being, which did not occur with any other method of treatment. Although short-lived in many, it was encouraging to the patient, and many begged for the second or third injection.

TABLE 2.—BLOOD SUGAR AFTER THREE, FOUR AND FIVE INJECTIONS, IN EIGHT PATIENTS IN WHOM IT WAS ABOVE 130

Patient	Original Blood Sugar	Blood Sugar After Three Injections	Blood Sugar After Four Injections	Blood Sugar After Five Injections
1	136	120	...	110
2	140	135	115	...
3	151	120	110	...
4	153	...	120	112
5	160	...	...	125
6	165	...	130	140
7	170	...	130	...
8	175	...	170	...

In about one third of the patients (eighteen) no improvement seemed to appear. Of the remaining thirty-two, five seemed to clear up entirely, leaving no trace of the disease, and the remainder (twenty-seven) were more or less improved. Although untreated cases of arthritis may show spontaneous remissions, and improvement, still the results were so characteristic and uniform when they occurred that they could not be attributed to such natural causes or to previous treatment.

The degree of improvement was based on the decrease in swelling and pain, increase in function, and general feeling of well-being. In many instances the amount of indefinite muscular pain (probably myositis) was markedly alleviated. Two cases were accompanied by a definite sciatica, which was not affected, although in both these patients there was some improvement in the joint symptoms. The multiplicity of joints involved apparently played little part in affecting the improvement, excepting when the extent or degree of involvement was marked. Six of the patients who were improved had more than two separate sets of joints involved—interphalangeal joints, wrists, ankles or knees—while among those who were not improved there were only three such cases.

EFFECT ON BLOOD SUGAR

The chemical analysis of the blood in those patients in whom it was performed (thirty-one) revealed sugar in amounts of from 90 to 175 mg. per hundred cubic centimeters. In only eight instances was the amount above 130 mg., and in six of these, after three, four or five injections, the amount was reduced so that no one of these showed more than 130 mg. This is suggestive of the results Pemberton has shown to follow removal of infected foci, i. e., increase in sugar tolerance.

CONCLUSIONS

1. There are a large number of patients, having chronic arthritis, who are not relieved by removal of

apparent foci of infection, or by any of the means of treatment at our disposal (perhaps due to hidden foci, secondary foci in and about joints, metabolic or endocrine change, etc.).

2. About 10 per cent. of the patients treated by this method in this series were relieved of all complaints, and objectively "cured." Whether these are permanent results we are not able to state, as the time thus far elapsed for these "cured" cases varies from two to six months.

3. About 55 per cent. were improved after having tried many or all types of treatment with practically no relief.

4. A certain degree of reaction is necessary, before we can hope to obtain an improvement, but the degree of reaction required is apparently much less than after such methods of nonspecific therapy as typhoid and other vaccines intravenously, and the many other nonspecific methods.

5. The blood sugar, in those cases in which before commencing the treatment it was increased (above 130 mg. per hundred cubic centimeters) was reduced as improvement occurred.

6. The administration of milk parenterally as a nonspecific protein is deserving of further study and trial; and, although not heralded as a "sure cure" for arthritis, it so often gives some relief, euphoria, and occasionally cessation of the process, that it probably will find a place in our therapeutic armamentorium.

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CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

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PRELIMINARY REPORT

During the course of some experiments on the efficiency of betanaphthol in the treatment of hookworm disease, a report by Dr. Maurice C. Hall on carbon tetrachlorid was received and it was decided to make use of the limited supply obtainable of the drug in an attempt to determine its action. Through the courtesy of Dr. Nichols of the Ceylon Government Bacteriological Laboratory, 60 c.c. of carbon tetrachlorid was obtained.

The work has been carried out in the Bogambra prison at Kandy, where prisoners volunteered to take the drug, it being explained to them that the treatment was quite new and the physiologic action of the drug in large doses unknown. Among the volunteers were men who had received the previous treatment with large doses of betanaphthol, and also a girl who had been treated with chenopodium. A prisoner, condemned to be hanged, also volunteered to receive the treatment, and was given the maximum dose of 10 c.c. of carbon tetrachlorid. This man will be executed, and a necropsy performed after the execution, a thorough search being made for helminths.

The drug was administered by mouth, on an empty stomach, no food being allowed from 4:30 p. m. until after treatment the next morning. Food was allowed immediately after treatment, the meal consisting of curry and rice. Gelatin capsules were unobtainable at the time of the experiment; consequently the drug was given in about 20 c.c. of water. No purge was given before or after, except in one case. This man had not had a bowel movement for two days previous to the treatment. He was given magnesium sulphate three hours after the carbon tetrachlorid.

The cathartic action of the drug was marked, in most of the cases the bowels moving in from three to five hours after administration of the carbon tetrachlorid. In the case of the 10 c.c. dose, the result was a copious, semiliquid stool in which the odor of carbon tetrachlorid was quite pronounced. In only one case was a forced stool passed.

In one case an ascarid was passed three hours after the administration of the drug.

Urine examinations were made in two cases, both before and after treatment. In the case of the condemned prisoner, the urine specimen both before and after treatment showed no abnormality. In the urine of the second case examined, albumin and a few granular casts were found before treatment. After treatment there was apparently no change in the urine. A dose of 3 c.c. of the drug in this case produced only slight giddiness, and the heart action was practically undisturbed.

In all but one case the only symptoms complained of were slight giddiness and a sensation of weight in the stomach. In one case, diplopia and nausea were experienced. The prisoner receiving the 10 c.c. dose of carbon tetrachlorid complained of giddiness, nausea and drowsiness. After sleeping for four hours, his giddiness had diminished and he experienced no further nausea. His condition was quite normal after a period of eight hours. The giddiness complained of by the majority of the prisoners was undoubtedly augmented by hunger following the long period of fasting before treament. In some of the cases no food was taken by the patients from 4:30 p. m. until 11:30 a. m. the following day.

Little effect was produced on the heart action, even in the case in which the dosage was 10 c.c., as shown in Table 2.

Table 1 gives the result of the preliminary microscopic examination of stools in the fourteen cases under consideration.

TABLE 1.—RESULT OF PRELIMINARY MICROSCOPIC EXAMINATION

Case	Hookworm	Ascaris	Trichuris	Oxyuris
1	+	—	—	—
2	+	—	+	—
3	+	+	+	—
4	+	+	—	—
5	+	+	—	—
6	+	+	—	—
7	+	—	—	—
8	+	+	—	—
9	+	+	—	—
10	+	—	+	—
11	+	—	—	—
12	+	+	—	+
13	+	+	+	—
14	—	—	—	—

Following the two treatments (110 grains, or 7 gm.) of betanaphthol in a previous experiment carried on at the Bogambra prison, an average worm count of 8 uncinarias for each patient was obtained; following the fourteen treatments with carbon tetrachlorid, 822 hookworms were obtained, or an average of 58.7 for each patient. Four of these patients had expelled hookworms after betanaphthol treatment. Patient 1

received 110 grains of betanaphthol in two treatments, and expelled seventeen necators. After 4 c.c. of carbon tetrachlorid, this patient expelled 399 necators and one trichuris. A period of six weeks elapsed between the last treatment with betanaphthol and the treatment with carbon tetrachlorid. Patient 3 received two treatments (110 grains) of betanaphthol and expelled six necators. After 3 c.c. of carbon tetrachlorid, fourteen necators and one female ancylostoma were passed. The same period elapsed between the last dose of betanaphthol and the carbon tetrachlorid. Patient 11 received two doses of betanaphthol, 110 grains, and expelled seventeen necators. After 4 c.c. of carbon tetrachlorid, this patient passed sixteen necators and twelve oxyurids. Patient 14, aged 8, received 8 minims a period of three weeks had elapsed following treatment, showed all fourteen negative for hookworm; seven of the eight cases which were positive for ascarids were found to be negative following treatment.

Patient 12 was executed, February 11, twenty-two days after treatment with 12 c.c. of carbon tetrachlorid, which was given in two doses. The first dose consisted of 10 c.c. of the drug, followed one week later by 2 c.c. A postmortem examination was performed, and the entire digestive tract from the pylorus to the anus was removed. Before removal, the bowel was tied off through the pylorus, at the junction of the ileum with the cecum, and at the splenic flexure. The four sections were placed in separate receptacles, opened, and their contents carefully washed out and screened for

TABLE 2.—WORM COUNT

Case	Weight, Lbs.	Dose, C.c.	Date	Worm Count * January 20 H.	A.	O.	January 21† H.	A.	O.	January 22 H.	A.	O.	January 23 H.	A.	O.	January 24 H.	A.	O.	January 25 H.	A.	O.
1	120	4	Jan. 20	280	0	2	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
2	103	4	Jan. 20	56	0	8	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
3	81½	3	Jan. 20	14	0	0	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
4	94	4	Jan. 20	18	1	31	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
5	121	4	Jan. 20	26	1	0	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
6	125	5	Jan. 20	..	0	..	..	0	..	0	..	..	141	8	72	0	..	..	..	..	0
7	128	4	Jan. 21	..	0	..	..	0	..	0	..	..	7	4	19	0	..	..	0	1	0
8	136½	4	Jan. 21	..	0	..	..	0	..	30	0	21	0	..	..	0	..	..	..	..	0
9	130	3	Jan. 21	..	0	..	..	0	..	0	..	..	37	1	8	0	..	..	..	..	0
10	96	3	Jan. 21	..	0	..	..	0	..	3	0	0	0	..	..	0	..	..	..	..	0
11	118	4	Jan. 21	..	0	..	..	0	..	16	0	12	0	..	..	0	..	..	..	..	0
12	120	10	Jan. 20	..	0	..	..	0	..	8	4	13	47	0	15	0	0	22	0	0	17
13	113	4	Jan. 20	..	0	..	..	0	..	0	..	..	40	0	31	0	..	..	..	..	0
14	48	1½	Jan. 23	..	0	..	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0

* H, hookworm; A, ascaris; O, oxyuris.

† Stools collected for this day were screened with stools on 22d.

TABLE 3.—PULSE AND BLOOD PRESSURE

Case	Age	Weight, Lbs.	Dose, CCl₄ C.c.	Before Treatment Pulse	Blood Pressure Systolic	Diastolic	One Hour After Pulse	Blood Pressure Systolic	Diastolic	Two Hours After Pulse	Blood Pressure Systolic	Diastolic
1	22	120	4	70	118	98	56	123	98	64	120	96
2	38	103	4	72	101	88	86	88	74	81	98	80
3	54	81½	3	71	137	118	68	135	118	72	136	115
4	35	94	4	57	104	93	74	102	89	68	102	90
5	24	121	4	62	84	72	70	92	76	66	90	74
6	34	125	5	61	103	92	80	108	91	82	104	94
7	45	128	4	56	114	92	54	106	84	58	108	82
8	19	136½	4	46	119	96	42	101	84	44	109	91
9	40	130	3	54	110	92	48	108	94	48	111	90
10	24	96	3	48	112	90	62	102	90	54	108	88
11	22	118	4	56	112	91	58	114	92	58	114	91
12	32	120	10	105	110	88	88	117	95	86	114	90
13	30	113	4	62	101	81	60	102	81	62	102	80
14	8	48	1½	110	90	74	96	88	76	98	86	75

of oil of chenopodium, and passed eighty-two necators and eight ascarids. Two weeks after the chenopodium treatment her stool was negative for hookworm ova. A further treatment with 1.5 c.c. of carbon tetrachlorid produced no helminths.

Unfortunately, sufficient carbon tetrachlorid was not available for further work directed toward the determination of the optimal dose. In the fourteen cases treated, the maximal dose given was 1 c.c. per 5.5 kg., and the minimal 1 c.c. per 19.6 kg.

Patient 1 passed one trichuris the day following treatment. This was the only case in which a trichuris was recovered.

SUPPLEMENTARY REPORT

In the foregoing I have outlined a treatment administered to fourteen selected patients in the Bogambra prison at Kandy. Thirteen of the fourteen were positive for hookworm.

Examination of the stools from these prisoners, after helminths. In the first portion, which included the duodenum and the portion of the pylorus of the stomach, no parasites were found, and none were found in the jejunum or ileum. In the ascending and transverse colon, 628 oxyurids were recovered, and in the descending colon, sigmoid and rectum, 2,864 oxyurids and thirty-two trichurids.

The spleen was normal in size and consistency. The liver showed no lesions on macroscopic examination, and the kidneys were normal in appearance.

CONCLUSIONS

1. Carbon tetrachlorid given in 10 c.c. doses to a man produced no ill effects as far as could be seen on microscopic examination.

2. Twelve cubic centimeters of carbon tetrachlorid removed all hookworms and ascarids.

3. The drug apparently had little effect on trichurids and oxyurids.

STERILITY STUDIES

PRELIMINARY REPORT *

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AND
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In the course of our routine application of the Rubin test in demonstrating the patency of the fallopian tubes, we have discovered several interesting facts which we believe to be of great value in this work. Dr. Rubin, and more recently Dr. Peterson, have thoroughly demonstrated the harmlessness of this procedure, and it is with their work as a foundation that we have been undertaking our experimental studies.

We have been using the test as simplified by Dr. H. D. Furniss.[1] The patient is put in the lithotomy position, and the buttocks are elevated. A speculum is introduced, and the cervix is wiped clean and painted with iodin. A cannula with a rubber tip, similar to the one that Peterson uses in his technic, is then introduced into the cervix until the rubber fits snugly. We find that simple pressure against the os is enough to hold it in place without subjecting the patient to the pain of grasping the cervix with a tenaculum. The vagina is then filled with boric acid solution, and a 50 c.c. syringe, filled with carbon dioxid with an attached manometer, is fitted to the cannula. Leakage at the os is readily discovered by the escape of bubbles out of the solution in the vagina.

Steady pressure of not more than 200 mm. of mercury (although we have repeatedly shown that higher pressure may be used without danger) is maintained until the gas passes freely through the tubes, or it is evident that they are not patent. Both Peterson and Rubin admit that they can only say that one or both tubes are open. We believe, however, that we can tell not only whether one tube is occluded, but also which is the affected one. This is done in the following manner: The operator or an assistant listens over the lower abdomen with a stethoscope while the injection is being made. At first there is no sound. Then, as the tubes open up, there is a high pitched bubbling heard over the side corresponding to the tube which opens first. This can be heard very distinctly in the quadrant corresponding to the patent tube and very faintly on the other side in those cases in which but one tube is opened. We have several times noted the bubbling sound in one quadrant only to find that, on raising the pressure in the sypringe, the second tube apparently opens, and the sound is heard equally on the two sides. As the gas first comes through, the sound is higher pitched; but, as the tube opens up and larger bubbles come through, the pitch drops. In a recent case we heard a rather low pitched bubbling in the right quadrant, and no sound on the left. On raising the pressure we heard a shrill, high pitched, sizzling sound in the left quadrant, both sounds persisting simultaneously while the pressure was continued. Our interpretation of this finding was that the right tube was wide open and that there was a stenosis of the left tube which did not completely obstruct it.

No doubt, in case the tubes are prolapsed into the culdesac there may be doubt in the interpretation of the auscultatory findings. However, the number of such cases must be small. We shall, no doubt, have more to report in regard to this detail in a later communication. If gas leaks out at the cervix, the sound is entirely different; the difference, however, must be heard to be appreciated.

Although our interpretation of these findings is based on logic and not on proved fact, we feel that the possible value of this work in the study of sterility is so great that we are making this preliminary report in order to call the attention of the profession to this method.

Not only is the Rubin test of value in the diagnosis of the cause of sterility, but we believe it is also of therapeutic benefit. The otologist inflates eustachian tubes in chronic otitis media, and gradually restores the middle ear to normal. Is it not possible that a mild, low grade inflammation may glue the tubes shut but not permanently close them? The fallopian tubes of these patients may be inflated and restored to normal so that pregnancy may result. We have demonstrated that tubes inflated only with difficulty at first are easily inflated the second or third time. Here, then, is hope from a therapeutic standpoint which we have formerly not been able to offer to our patients.

A more complete report of our technic in handling our sterile patients will be published in a later communication.

225 Professional Building.

* From the clinic of the Woman's Hospital.

1. Furniss, H. D.: Surg., Gynec. & Obst. **33**: 567 (Nov.) 1921.

CARDIOPULMONARY SNAP

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The two cases here reported illustrate an unusual pleuritic phenomenon which is not mentioned in the literature available to me.

REPORT OF CASES

CASE 1.—A man with a moderately advanced pulmonary tuberculosis of ten years' standing, March 24, began to complain of pain over the lower sternum and the precordium and in the left shoulder. This pain was more severe on lying down. On deep inspiration there was a sharp pain, typically pleuritic in character, in the left nipple area. The patient stated further that at times, when he lay in a certain position and breathed slowly, he was conscious of a snapping noise and sensation in the neighborhood of the heart. At other times the snap occurred with each heart beat, especially when he lay turned slightly toward the left side.

Physical examination disclosed a fibroid tuberculosis of both upper lobes. There was marked tenderness along the border of the left trapezius muscle. On deep inspiration there was a pleural friction sound, loudest just below the left nipple. On slow inspiration there occurred, over and to the left of the precordium, a palpable and audible snap, which was synchronous with one cardiac systole. With the patient turned toward the left side through an arc of about 20 degrees, the snap occurred with each systole when the breath was held at about the midpoint of quiet inspiration. In character, this sound or snap was comparable to a joint snap, as readily palpable but less loud and lower in pitch. Stereoscopic roentgentograms revealed nothing to account for this noise. The pain and soreness gradually lessened during the course of ten days, but the snap persisted for about four weeks, during which time it diminished somewhat in intensity.

CASE 2.—A man with moderately extensive pulmonary tuberculosis, demonstrable by the roentgen ray but not on physical examination, about April 1 began to complain of pain over the lower part of the sternum, adjacent ribs and upper epigastrium. At times the pain radiated toward the

right side. The pain was always more severe on standing, and more or less relieved on lying down. It was not influenced by respiration. There was no referred pain of phrenic irritation. The patient stated that at times he could hear and feel a tap over the lower part of his sternum which seemed to occur with each heart beat. At other times the tap would occur with each inspiration. He had been examined thoroughly, and had had roentgenograms made. Nothing was found to account for the pain or tap.

Physical examination, April 14, disclosed a pleural friction rub, audible along the right sternal margin below the fourth rib. On slow respiration in the recumbent position, a palpable and audible snap was present over the lower sternum, loudest at the right border between the fourth and sixth ribs. This tap occurred once with each inspiration, and occasionally once on expiration. The tap, which the patient described as having been present with each heart beat, could not be reproduced in any position. This patient was not seen again.

COMMENT

This unusual phenomenon is annoying and possibly alarming to the patient; certainly he demands its explanation. Systolic gastric succussion cannot be considered as a possible source of the noise, since the snap is but faintly audible below the rib margin, and in Case 1 the snap with each cardiac systole was present in the morning before food or fluid had been taken and when gastric succussion could not be elicited by the usual method. The snapping sound sometimes heard over the sternum and adjacent parts of the ribs on respiration, and which originates in the costochondral, chondrosternal or sternal junctions is ruled out in these cases both by the character of the sound, the bone-cartilage noise being higher in pitch, and by the history in Case 2 and the physical findings in Case 1; that is, the snap occurred at times with each cardiac systole when the thoracic cage was held motionless. There is no possibility of confusion of the snap with the so-called xiphosternal crunch described by Solis-Cohen[1] and further studied by Blumer.[2] The first writer has described this sound as resembling that of a boot treading in soft snow. Blumer suggested that the noise is produced by changes in tension of the loose tissue in the sternopericardial ligament. The crunch often simulates a pericardial friction, though it may have a clicking quality; but it is never palpable and never has the loud snapping quality described above. It is, furthermore, a physiologic and not a pathologic phenomenon.

The explanation of the snap evidently is that, in the presence of pleural inflammation between the heart and the chest wall, the movement of the gliding lung margin is impeded by a pleural surface roughened by an eruption of tubercles or a fibrinous deposit. Cardiac systole, by enlarging the space in which the lung margin is advancing, and also by momentarily increasing the negative intrathoracic pressure, permits the lung suddenly to slip past the obstructing area with a snap. When this sound is repeated with each systole, there is evidently a diastolic back-push to the lung margin, which then, with the quicker alteration in relative position of heart and lung on systole, snaps back to its original position.

The long duration of the pleurisy, as well as the character of the friction, is rather unusual. Col. G. E. Bushnell,[3] who has called my attention to this fact, translated the following quotation from a study by von Ziemssen,[4] who describes a circumscribed indurating pleurisy distinguished by its long duration and extraordinary intensity of the friction sound:

> The rough crepitations which are produced by the slipping of the pleura are usually as distinctly perceptible for the patient as for the physician, and can be heard with the same distinctness for the space of several weeks. In view of the duration of the phenomenon, the roughness in this form of pleurisy, which has its seat mostly in the complemental space in its lower and anterior portion, can hardly be attributed to a mere fibrin deposit; it points rather to a hypertrophic thickening of the pleura.

The pleurisy in the cases reported was quite possibly of this type.

610 Martin Building.

1. Solis-Cohen: A Xiphosternal Crunching Sound, Am. J. M. Sc. **126**: 131 (July) 1903.
2. Blumer, George: A Note on the Normal Peculiarities of the Heart Sounds in the Region of the Sternum, Arch. Int. Med. **14**: 605 (Oct.) 1914.
3. Bushnell, G. E.: Personal communication to the author.
4. Von Ziemssen: Ueber seltnere Formen der Pleuritis, Festschrift Virchow, **3**, Internationale Beitraege zur wissenschaftlichen Medizin, p. 281.

PERFORATING ULCERS OF THE CECUM *

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REPORT OF CASES

CASE 1.—A man, operated on, April 3, 1895, had had acute right inguinal pain and tenderness. There was no tumor. The rectal temperature was 101. The condition was diagnosed as appendicitis. A right rectus incision was made. The appendix was normal. The cecum was enormously distended, with three points of impending perforation 6 cm. in diameter. The peritoneum was reduplicated over these. Necropsy, five days later, revealed that the points of suturing held, but there were six new perforations in the cecum. These ulcerations were punctate, round, sharp margins, not necrotic.

CASE 2.—A man, aged 22, operated on, Dec. 4, 1916, had suffered for a number of years with gassy dyspepsia, sour brash and delayed digestion, with relief on vomiting and never any pain. There was some discomfort in the appendicular region. The condition was diagnosed as chronic appendicitis or cholecystitis. The gallbladder was opened, disclosing dark bile, thickened with mucus, but no calculi. Drainage was inserted. The remainder of the abdomen was apparently normal on palpation and exploration with the exception of the appendicular region. A second opening was made. The appendix was clubbed, fibrous, and excised through the tip of the cecum. On manipulation of the cecum to explore adhesions, a ligature in the cecal incision pulled off, with discharge of a substance resembling a dysenteric stool. The stoma was religated with linen thread. Necropsy on the fourth day revealed the ligature on the appendix stump in place. There was a ragged perforation of the cecum the size of a 5 cent piece opposite the ileocecal junction.

CASE 3.—A man, aged 56, operated on, July 21, 1921, a clerk of good habits, experienced abdominal trouble three weeks before, starting with severe pain at the umbilicus, and green, watery vomitus. This recurred with intermissions. During the second week of the present illness, the pain shifted to the right lower quadrant. Vomiting continued, becoming brown. The patient had been given considerable bismuth. Roentgenograms were taken. There had been no action of the bowels in ten days. On admission to the hospital the patient presented marked pyorrhea, coated tongue and reddened throat. Pain, rigidity, and tenderness were noted at the cecal region, particularly on deep pressure. The heart sounds were distinctly heard at the pubes. As some type of appendicitis was suspected, an incision was made through the right rectus sheath. When the peritoneal cavity was opened, a puff of

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

gas was heard. The peritoneum and viscera were markedly injected, and purplish red. The appendix was normal. The cecum was agglutinated to the lateral wall. When it was lifted up, liquid feces exuded from several small openings in the ulcerated areas, about opposite the ileocecal junction. These points of ulceration were about 6 cm. in diameter. In view of previous experiences, the cecum was stitched to the abdominal peritoneum and incised freely. Bismuth feces were removed. Convalescence was protracted, and during it the patient developed exfoliated stomatitis, associated with which was complete anorexia and an intolerance by the stomach even of water except in small quantities.

COMMENT

These three cases, briefly recited, are descriptive of three types of ulcerations which may occur at this portion of the intestinal tract. We are not including those due to typhoid ulcer lesions. Organs of the body which are more frequently affected have received the greater attention. At one time, appendicitis was believed to be a cecal affection and there was then considerable literature on what was termed typhlitis. Fitz's demonstration of the great frequency of inflammation of the appendix and its surgical importance has taken from the cecum the attention which its pathology should demand.

The rarity of ulcerations of the cecum in our clinic, running over a period of thirty-five years, has led to a careful searching of the literature, but we have been disappointed, since embryologies and physiologies have little to say in detail of the adenoid tissue of the intestinal tract. Our works on diseases of the intestines are likewise careless in scientific detail. Monographs on appendicitis speak fully of the adenoid tissue of the appendix, yet have no remarks on its analogue, the cecum. It is the same old story, that full information on any topic can be obtained only by broad reading through the literature of many years.

As there is a strong correlation between the physiologic stomach and the cecum, perhaps we may better come to a comprehension of the lesions which occasionally occur in the intestine by a review of the lesions found higher up. Irritating gastro-duodenal contents may produce erosion and, with infection prevailing, these erosions may become ulcerated. If the blood stream is microbic or septic and the stomach sensitized, then hemorrhages or infarcts may ensue, which become devitalized and digested by the stomach juices. There exists in the coats of the stomach adenoid tissue which, on the lesser curvature and toward the pylorus, becomes discrete glandular structures.

This adenoid tissue, as follicular glands, is found at the pharynx and in the cecum as well as in the pyloric region. Through the lymphatics we get infection of these small structures. They soften, break down, and, in the stomach, are digested, leading to perforations from 3 to 4 cm. in diameter. Some authorities assert that the majority of discrete perforations have their origin in the lenticular glands.

In the cecum we have the same initial pathologic condition. Our second case, with the large, sloughy ulcerations, was probably one of hemorrhagic cecitis, a type of lesion which, when it occurs further along in the large intestine, we call dysentery. It seems strange that an inflammation so intense should extend through the coats, producing a slough, and the appendix escape.

But the first and third cases seem to be explainable only on the grounds of primary inflammation of the adenoid tissue, the perforations all being of the same size, with sharp edges and no marginal sloughing.

The chemistry and biology of the upper abdomen is fairly simple, and has been studied thoroughly. Its germ life is one of the vagaries; but the physiologic and chemical states have been well observed, while the cecum is a dark spot in pathology as well as in bacteriology.

The drainage being good, it seldom becomes a surgical proposition. Its bacteriology has so far defied investigation, lack of oxygen suggesting the possibility of anaerobic growth. Accustomed contact with that which is considered most septic and abounding in germ life has produced an immunity, but this protection must at times break down, and were it not for the drainage so easily obtained in the colon, and the fact that an affected cecum destroys appetite and food intake, destructive lesions might oftener be found.

ABSTRACT OF DISCUSSION

DR. CHARLES H. MAYO, Rochester, Minn.: It is of educational value as well as interesting to report these cases of ulcers of the cecum. My knowledge of the matter comes second hand from Dr. Rosenow's experimental research on animals and from Dr. Robertson, who has charge of the necropsies at the Mayo Clinic and hospitals in Rochester. Rosenow shows that certain forms of bacteria injected into the blood stream cause ulceration of the colon, especially of the cecum; other forms cause ulceration in the alkaline small intestine or in the acid stomach. Robertson has found at necropsy that such ulcerations in the cecum occur as terminal results, somewhat like terminal pneumonia in cases in which infection predominates and the patients are from two to four days dying. It is probable that such ulcers occur in very sick toxic patients who recover, and the ulceration naturally heals as a part of the process of recovery.

DIFFERENTIATION OF HYPERTHYROIDISM AND OF HEART DISEASE FROM NEURASTHENIC STATES

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It has been our experience that about 30 per cent. of patients coming to the thyroid clinic fail to show any disorder attributable to the thyroid gland, though nearly all patients are referred to the clinic by physicians. Similarly, 30 per cent. of the admissions to an adult heart clinic fail to show any disease of the heart.

Of the 30 per cent. rejected from the heart or from the thyroid clinic, a fair number are borderline, doubtful cases that are rightly referred to these clinics for special examination; but at least half have been diagnosed in good faith, though wrongly, as heart or thyroid disease, which could have been diagnosed correctly without elaborate special methods. Often enough these wrongly diagnosed cases have been sent by very able physicians who have not, however, had the opportunity to see large numbers of cases of hyperthyroidism, or to follow personally many cases of true heart disease with a knowledge of modern conceptions of heart disease.

This large number of cases that make up half the rejections both from the thyroid and from the heart clinic have no demonstrable disease to account for the symptoms. Where a pathologic condition is found there is found also a great discrepancy between the

extent of the disease and the disability of the patients. The members of this group resemble one another closely in their symptoms, and form a division as definite, though not so easy to describe, as the groups of cases of true thyroidism and of true heart disease. For the purpose of differential diagnosis the term "neurasthenic states" will serve to name this group. (Actually they are neurasthenics with symptoms predominating that suggest thyroid or heart disease.)

It is the purpose of this paper to enumerate and discuss (1) symptoms that may be common to hyperthyroidism, to heart disease, and to these so-called "neurasthenic states," without demonstrable disease; (2) symptoms essentially peculiar to hyperthyroidism and (3) symptoms essentially peculiar to heart disease.

1. SYMPTOMS IN NEURASTHENIC STATES

The symptoms in neurasthenic states in general bear a close resemblance to those shown by many soldiers in all armies in the late war, and described variously under the terms "D. A. H.," "soldier's heart," "effort syndrome," "les fatigués," etc. It is interesting to note that almost invariably when any physician experienced in civil practice first saw these cases in large numbers

SYMPTOMS COMMON TO NEURASTHENIC STATES, HYPERTHYROIDISM AND HEART DISEASE*

1. Neurasthenic States	2. Hyperthyroidism	3. Heart Disease
(a) Fatigue	(a) Goiter	(a) Enlargement
(b) Breathlessness	(b) Eye signs	(b) Diastolic murmurs
(c) Giddiness	(c) High basal metabolism	(c) Primary disorders of the heart beat
(d) Palpitation	(d) Female preponderance	(d) True signs of heart failure
(e) Tachycardia		
(f) Tremor		
(g) Heart pain		
(h) Vasomotor disturbances		
(1) Cyanosis		
(2) Sweating		
(3) Dermographia		
(i) Emotional disturbances		
(j) Gastro-intestinal disturbances		

* The references in the text are to the classification given in this tabulation.

in army hospitals, his first opinion was that the patients were disabled by myocarditis, and his second that they had hyperthyroidism. Lest there be those that think even now that one or the other of these suppositions may be correct, it may be stated that these cases failed utterly to develop true signs of hyperthyroidism under prolonged observation; nor did they develop true signs of heart disease, and, when exerted to the point of collapse, failed to show true signs of heart failure. Any combination of the symptoms in the first column of the tabulation may accompany a hyperthyroidism or a heart disease. Certain of them are practically always present in hyperthyroidism, and many are common in heart disease. But they can exist to a severe degree, to the point even of complete invalidism, in patients without any demonstrable disease.

There are no absolute, measurable differences in the character of these symptoms in the three conditions discussed here, but there are suggestive differences in some which deserve mention.

SYMPTOMS COMMON TO NEURASTHENIC STATES AND HYPERTHYROIDISM

(*a*) *Fatigue.*—Fatigue or weakness exists in both conditions, but the weakness of hyperthyroidism is more clean cut than that seen in neurasthenic states. It is frequently so severe that the patient will complain of weak and trembling knees and be unable to climb stairs, and it seems to be a real muscular weakness. One of the outstanding features of hyperthyroidism consists in weakness forcing itself upon the mind of a patient usually reluctant to admit it. The reverse is usually true with neurasthenia. The neurasthenic feels a disability to exertion greater than is justified. The fatigue of the neuroses appears less as a true physical weakness, but more as an inability to persevere in a sustained effort.

(*e*) *Tachycardia.*—There is no essential difference between the simple tachycardia of hyperthyroidism and that frequently found in neurasthenic states. Aschner's test, a slowing of the heart rate with pressure on the eyeballs, has been given as a differential point in this connection; also a marked slowing of the heart rate when the patient, standing, bends the body forward from the hips to a horizontal position. These phenomena are, however, found commonly in both conditions (often, in fact, among well persons or those sick from almost any cause).

(*f*) *Tremor.*—This exists in both conditions, but is often more marked, coarser, and less under control in the hyperthyroid states than in the neurasthenic states. The tremor of the neurotics is also less constant within short periods of time, and is influenced distinctly by mental control. But in individual cases there is no definite useful standard for differentiating the tremor of one cause from that of the other.

(*i*) *Emotional Disturbances.*—Of all the clinical signs, emotional disturbances are the most difficult to analyze and measure.

In a general way, a patient with hyperthyroidism is in a state of emotional overactivation. There is an inability to adjust the mind and the body to a state of repose. The disturbance shows in neurasthenics, on the other hand, when effort is made to maintain mental and bodily activity up to the every-day demands of life. The mental state of most hyperthyroid patients is essentially optimistic, while that of neurotics is essentially pessimistic. A toxic hyperthyroid patient may burst into tears on the slightest excuse, but within a short time may regain emotional balance, smile, and remark: "I am ashamed of myself for crying; I did not do that before I had this trouble." These patients are not imbued with self-pity, but rather with self-reproach for lack of control. If it may be so stated, the crying in hyperthyroidism is largely without anguish. The crying of the neurotic, on the other hand, is distinctly colored with anguish and self-pity. The emotional state of the hyperthyroid patient is largely one of irritability. This irritability is usually realized and deprecated by the patient suffering from this disease, while gloominess and plaintiveness characterize the neurotic, who does not readily admit, and who perhaps does not fully appreciate their presence.

(*j*) *Gastro-Intestinal Disturbances.*—Variations in the direction of diminution in appetite occur in both diseases, and such phases are of negative differentiating value. Marked increases up to voraciousness associated with progressive loss of weight do not occur with neurotic states, but not infrequently occur in hyperthyroidism, and when present are characteristic of that disease. Nausea, vomiting and diarrhea, appearing and disappearing suddenly without cause, occur not infrequently and characteristically with hyperthyroidism, and do not appear except coincidently with neurotic states.

SYMPTOMS COMMON TO NEURASTHENIC STATES AND HEART DISEASE AND HYPERTHYROIDISM

(*b*) *Breathlessness.*—Extreme breathlessness on effort is common in neurasthenic states, and in hyperthyroidism, and indeed in many other conditions. Marked breathlessness, if due to heart failure, should be associated with orthopnea and coughing.

(*e*) *Tachycardia.*—Simple tachycardia is a tachycardia that varies, in normal directions with exercise or excitement and rest, etc. Simple tachycardia of an extreme degree (more than 120 at rest) is a more common symptom in neurasthenic states and hyperthyroidism than among cardiac patients, but there are no inherent differences between these simple tachycardias.

Primary tachycardias, shown by a rapid, absolutely fixed rate, or an absolutely irregular heart, mean a disorder of the heart itself. But the absolutely irregular heart (auricular fibrillation) is found in about 10 per cent. of hyperthyroidism cases, either as an established condition, or occurring at intervals for short periods (hours or days).

(*g*) *Heart Pain.*—In neurasthenic states, heart pain may be severe and may be located anywhere near or over the heart; it may extend to the neck and one or both arms, but as a rule it is subcardial. It usually does not bear a fixed relation to exertion as often it does in "true" angina pectoris. Heart pain occurs much more commonly from neurasthenia than from disabling heart or circulatory disease (about ten to one) in the authors' experience in civil practice. Heart pain is an occasional complaint in hyperthyroidism.

(*h*) *Vasomotor Disturbances.*—Cyanosis in neurasthenic states usually is confined to the extremities—aerocyanosis—but it may be general and may be very marked. It is seldom marked in pure hyperthyroidism. If due to heart disease, it should be generally distributed.

2. SYMPTOMS PECULIAR TO HYPERTHYROIDISM

Symptoms which in this connection may be called peculiar to hyperthyroidism, and which are not found in neurasthenic states, are goiter, staring, high basal metabolism and female preponderance.

(*a*) *Goiter.*—Great care must be exercised in diagnosing enlargement of the thyroid gland in those cases in which the goiter is not definitely and obviously present, as it has been our experience that goiter is often diagnosed in girls with long, thin necks with a prominent isthmus when the same thyroid would not have been at all visible were there present a moderate deposit of subcutaneous fat. On the other hand, in certain very fat necks there is a roll of fat running transversely across the neck directly over the thyroid and located between two folds in the skin. We have had a great many cases with fatty folds of this type referred to us with a question of thyroid enlargement. Still another type exists in which a slight symmetrical enlargement of the thyroid occurs at or about the time of establishment of the menses. This is the type in which the enlargement is probably physiologic, and has in our experience practically never been associated with any thyroid disease.

(*b*) *Eye Signs.*—A host of signs has developed from study of the eye changes in hyperthyroidism. The striking and most constant one of the lot is best described as "staring." Staring, of course, is a matter of degree, but usually definitely present in thyroidism and definitely absent in the other two conditions. The next most reliable eye sign, when present, is exophthalmos. It is of value, however, only as positive evidence, since hyperthyroidism exists very often in its absence. Extreme care must be taken lest exophthalmos be diagnosed in the cases in which there exists only a normally prominent eye, and staring when the "sharp piercing eyes" expression is but a normal and often familiar characteristic of the individual. The other eye signs are not of practical value.

(*c*) *High Basal Metabolism.*—Basal metabolism tests are reported in figures, and this tends to give an appearance of accuracy and certainty, which in certain instances is misleading. For example, we have several times seen increases in basal metabolism rate up to + 30 in patients clinically neurotic and without any true clinical signs of hyperthyroidism. With repeated tests and adjustment of the patient to the tests, the basal metabolism figures have come down to "normal limits." On the other hand, we have seen such individuals with repeated tests continue to maintain a moderately increased basal metabolism rate, owing to their inability to adjust themselves to the test because of their persistent neurotic states. In the latter case, convincing signs of hyperthyroidism being absent, we prefer to accept the explanation given above rather than to attribute the neurotic symptoms to so-called latent hyperthyroidism—this diagnosis being based solely on an elevated basal metabolism reading, and symptoms that may be due to neurasthenia. In our experience, diagnoses modified by the adjective *latent* usually are wrong. The basal metabolism test will never be an easy and sure method for the inexperienced to trust for differential diagnosis; but it is indispensable and of great merit when discreetly used.

(*d*) *Female Preponderance.*—Females preponderate in this goiter clinic in the proportion of more than ten to one. The preponderance aids us in diagnosis only slightly, if at all, but it is an observation peculiar to hyperthyroidism in distinction from heart disease and neurasthenia.

In the clinic we have carried out a series of Goetsch tests checked by prolonged clinical observation, basal metabolism records throughout the year in operative cases, and reaction (in terms of clinical improvement) to operation; it has been our experience that the test is not of value as an indication of hyperthyroidism.

3. SYMPTOMS PECULIAR TO HEART DISEASE

None of the signs in the first column of the tabulation are necessary to a diagnosis of heart disease. No number of these alone justifies a diagnosis of heart disease. Breathlessness, tachycardia, cyanosis, heart pain, for instance, are not uncommon in a variety of conditions—convalescence, fear, fatigue, etc., when the heart is perfectly sound. They occur commonly and to an astonishing degree in patients without any disease. This is not a suitable place to discuss the whole problem of diagnosis of heart disease; however, in connection with the subject of this paper, a brief outline is justified. The number of wrong diagnoses of heart disease that we see would be reduced if certain precepts were generally followed.

To diagnose true heart disease in the great majority of cases, it is necessary to have one at least of these signs: Enlargement, diastolic murmurs, primary disorder of the heart beat, or signs or history of heart failure. A history of rheumatic or syphilitic infec-

tion naturally gives an added weight to doubtful signs. We admit, of course, a rare coronary disease with associated myomalacia cordis, or congenital heart, or acute infection of the heart which might not fit these statements. But these do not make up the number of cases that constitute the group of patients we find (wrongly) classed as having heart disease.

(*a*) *Enlargement.*—This is often hard to determine. When enlargement alone is the evidence of heart disease, it should be very definite. A rapidly beating heart often gives the impression that it is enlarged when careful examination by direct methods, or by roentgenography, will show it to be small.

(*b*) *Diastolic Murmurs.*—These are either present or absent: they are not a matter of degree; but, as is well known, frequently prolonged apical first sounds, such as are common in neurasthenic cases and in hyperthyroidism (as well as in normal persons) are mistaken for mitral diastolic murmurs. A mitral diastolic murmur must be longer than any first sound could possibly be, to be called a murmur and to serve by itself as ground for a diagnosis of heart disease. Systolic murmurs in themselves, and by themselves, do not justify a diagnosis of heart disease. This is now scarcely ever disputed. They are the rule in hyperthyroidism and are common in neurasthenic states, in patients with diseased hearts, and in normal persons.

(*c*) *Primary Disorders of the Heart Beat.*—Those which justify in themselves a diagnosis of heart disease are auricular fibrillation (absolutely irregular heart beat) and paroxysmal tachycardia—sudden attacks of rapid, absolutely fixed rate, lasting for any interval of time up to days. Heart block, alternation and other disorders occur so rarely without any other true signs of heart disease that they scarcely deserve mention in this connection. Extrasystoles are a definite and common disorder, of course, but this diagnosis is not of great significance.

(*d*) *True Signs of Heart Failure.*—The true signs of heart failure are due to venous engorgement—cough, orthopnea, sometimes hemoptysis, from engorgement of the pulmonary circulation. Congestion of the neck veins and engorgement of the liver should be demonstrable in the systemic circulation in true heart failure. A story of breathlessness or palpitation or even of edema is not in itself evidence of heart failure.

It should be realized that neurasthenic states may and frequently do complicate other disorders. They may complicate a hyperthyroidism, and their symptoms persist after a real hyperthyroidism is cured. Frequently a true heart disease patient is found who is disabled by neurasthenic symptoms complicating, but in no sense directly due to, the pathologic condition of the heart.

CONCLUSION

Hyperthyroidism cannot be differentiated from neurasthenic states, nor heart disease from these neurasthenic states, by any special laboratory method. These cases can be satisfactorily differentiated in the great majority of cases only by a careful history and physical examination by the unaided senses, with a conscientious balancing of the signs and symptoms of organic disease against those which may be the results of disease, but which, on the other hand, may be due to physiologic states alone.

Basal metabolism estimations are of great value as an aid in the diagnosis of hyperthyroidism, but only when not overvalued as evidence, and when the necessity of repeated tests in many cases is realized.

There is always a number of borderline cases that cannot be differentiated at a single observation. Accurate diagnosis of these cases depends on prolonged or repeated observation and examination by the foregoing methods, and not on a multiplication of special tests, or on attempts to interpret these tests more and more finely.

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REPORT OF FIVE CASES OF MASTOIDITIS WITH ATYPICAL SYMPTOMS

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The purpose of this paper is to call attention specifically to those cases of purulent mastoiditis which do not come under the usual classification and do not present its so-called typical symptoms. By this we refer to the drooping of the posterosuperior canal wall, tenderness on pressure over the mastoid cortex, deep-seated and continuous pain, fever, continuous discharge from the external auditory canal, and postauricular swelling. It seems timely, therefore, again to call attention to the fact that there are instances of osteitis of the mastoid process requiring operative interference which are secondary to tympanic infection but in which the tympanic portion of the disease, so far as signs are concerned, plays a comparatively insignificant rôle.

In the cases about to be described, the history shows no discharge at any time, or at least no recent discharge, from the middle ear. Definition of diseases in textbook form must necessarily be more or less dogmatic in character; hence our clear-cut textbook description of the indications for the mastoid operation. But as our studies have been more thorough and more complete, particularly by men of wide experience in special hospitals, we have been forced to the recognition of a rather large proportion of atypical cases, and believe that these cases are far more common than we might otherwise suppose. In other words, there are many operative cases in which the majority of the so-called typical symptoms are absent. Many times patients present themselves with characteristics of the middle ear and external auditory canal indicating the presence of an operative mastoiditis who perhaps at some previous time may have had some of the so-called classical signs and symptoms of mastoid disease. When, however, they come under observation, they have, with the exception of a middle ear that gives no evidences of resolution, no other cardinal signs or symptoms of mastoid involvement.

The peculiarities or the peculiar appearance of these middle ears has recently been described by Dr. Dench. In children, particularly when the history of headache or pain is not obtainable, it has frequently been our experience to see a subperiosteal abscess as the first evidence of mastoid disease or of middle ear infection. Occasionally such a subperiosteal abscess will not be tender. It is true, of course, that this condition is invariably secondary to an infection of the middle ear, and in no case in which we have observed this state of affairs have we been able to conclude that we were

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dealing with perfectly normal tympanum. Such instances, however, have been reported, but we are doubtful whether the observers had taken into account minor changes in the drum, slight fulness or thickening, both of which are evidences of recent tympanic infection. Too much stress has been put upon the classical signs and symptoms of mastoidities, and too little is known by our graduates in medicine concerning severe mastoid infections in which most of the so-called typical symptoms are absent. It is a curious fact that patients are frequently admitted to the services in general hospitals with unilateral headache and tenderness over the mastoid without any discharge from the ear, and the condition present is not suspected because of the absence of a discharge from the ear. The following cases represent the types which we have in mind:

REPORT OF CASE

CASE 1.—E. L., a man, more than two months before admission into the hospital had a cold in his head, followed by pain and tinnitus and partial deafness in the right ear. This lasted two weeks and then the pain subsided, but the deafness persisted. There was no discharge. A week or two before admission, the pain in the right ear again became severe and extended over the right side of the head. There was some fever, but still no discharge. A few days before admission, the patient had a distinct chill. The left mastoid had been operated on a year previous. The right canal was distinctly narrowed. The drum was thick, but not bulging. There was no perforation and no discharge. No landmarks could be made out. The mastoid was tender far back over the emissary. At operation an enormous perisinuous and epidural abscess was found.

CASE 2.—E. H., a man, in September had influenza. During this attack he had some pain in the right ear, lasting a few days. He was confined to bed one week. When he was up and about again he complained of tinnitus and some stuffiness in the right ear. At no time was there any discharge. Early in October he consulted an able otologist, and during the months of October, November and December was under his care. The treatment consisted of inflation, the usual care of a tubotympanic catarrh. All this time, however, the patient complained of unilateral headache. December 31, he consulted one of us. At that time there was a narrowing of the canal toward the tympanum. The drum was thick and lusterless, but not bulging. The short process could be seen as well as a little of the hammer handle. There was no tenderness over the mastoid proper, but somewhat farther back there was distinct tenderness over the region of the sinus. The diagnosis of perisinuous abscess was made, and an operation was advised. A large perisinuous and epidural abscess was found. No myringotomy was performed. Healing was uneventful. The patient was discharged at the end of nine weeks, with hearing of twenty-six double vibrations, whisper at 25 feet and positive Rinné test.

CASE 3.—D. B., a man, had been treated for nose trouble, probably sinusitis, but without apparent ear complications, nine months before. Five weeks before he had a severe attack of pain in the left ear and the left temporal region. External swelling soon became marked, and he sought relief in the ear service of the Manhattan Eye, Ear and Throat Hospital. The external swelling was so extensive, partially closing the external auditory canal, that the majority of the staff considered it to be furunculosis. He then consulted an otologist at his office, who opened the ear drum, but no discharge followed. At no time during the subsequent treatment was there any discharge from the external auditory canal. The external swelling extended anteriorly until it involved both left eyelids; when we saw him, both eyelids were edematous. At this time a roentgenogram disclosed extensive involvement of a large pneumatic mastoid. Arrangements were made for operation, but the man disappeared for about a week, reporting that the external swelling had subsided. It returned, however, and became so extensive that the left eye was entirely closed and the eyelids of the right eye were considerably swollen and edematous. Mastoid operation was then performed, and a large cortical perforation was found at the root of the zygoma. An enormous abscess involved the soft tissue of the temporal and parietal region of the scalp. He also had a very large perisinuous abscess, and the dura of the middle cerebral fossa was denuded over a wide area. He made a rapid and uneventful recovery, with good hearing.

CASE 4.—Dr. Hays, of the Section on Otology, New York Academy of Medicine, April 14, 1922, reported the history of a child, aged 4 years, who had temperature of about 102 F. for three days, accompanied by grippal symptoms. Then there was a mild attack of scarlet fever with a temperature of about 103 for a few days longer, when the temperature became normal. Three weeks later the attending physician, a pediatrician, found a large cervical gland on the left side of the neck, immediately below the mastoid bone, and a temperature of 103. There was no complaint of pain, but examination revealed the external auditory canal so swollen that it was impossible to obtain a view of the drum. Mastoid tenderness was present, but the child did not appear to be ill and did not complain of pain. Mastoiditis being suspected, a roentgenogram was made which showed evidences of breaking down of the mastoid cells. Operation disclosed a large quantity of pus in the mastoid, and a perisinuous and epidural abscess. Immediately after operation the temperature became normal, and convalescence was rapid with good hearing. The ear drum was not punctured, and there never has been any discharge from the external auditory canal.

CASE 5.—A. R., a woman, early in December had had pain and tinnitus in the right ear. At first the pain was severe and fairly constant; but after the administration of some drugs by the local physician the severe pain ceased. The tinnitus, however, continued, and at intervals during the day there were shooting pains over the right side of the head. There was never at any time discharge from that ear. For two days before coming to the office she noticed a small swelling far back behind the mastoid region. The left ear was normal. The right tympanum was very much thickened so that no landmarks were visible. Hearing in the left ear was normal. The Weber test was referred to the right ear, the low tone limit raised and the hearing for whisper considerably diminished. January 19, simple mastoid operation was performed. The mastoid was extensively diseased. A firm, beet-like, organized granuloma shut off the antrum out of the aditus. Corresponding to the swelling behind the mastoid there was a perisinuous abscess in which the sinus lay exposed, covered, however, with granulation tissue for about 1 inch behind the knee, and 1¼ inches in front of the knee. The wound healed rapidly; March 21, the ear was dry. She heard the whisper at 20 feet, and twenty-six double vibrations; the Rinné test was positive; the Weber test was referred to the right. The postauricular wound was healed in a firm scar. The patient was seen again one year later, and during the interval had no trouble with the right ear.

Five similar cases were seen within six weeks of the one occurring in 1919. Two of these cases occurred in private practice. Three of the patients were operated on in Dr. Phillips' service at the Manhattan Eye, Ear and Throat Hospital.

CONCLUSIONS

We feel justified in bringing this to the attention particularly of the teachers of otology. The observation of so many cases of this nature in so short a time is, to our minds, an evidence of the frequency with which they occur. Furthermore, the fact that in virtually every instance no diagnosis was made or even suspected until the patients came into the hands of the otologists seems to us an evidence of the fact that both textbooks and teachers are wanting in their failure adequately to describe this condition to students.

40 West Forty-Seventh Street.

A DISEASE CLINICALLY RESEMBLING EPIDEMIC DYSENTERY

REPORT OF OUTBREAK IN A RURAL COMMUNITY

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During the summer of 1921 there occurred in this locality an epidemic of an acute, severe, diarrheal disease clinically resembling dysentery. Reports from other places indicate that it was prevalent throughout a large part of the state. The rarity of such epidemics in this locality, its size and the occurrence of certain conditions which seemed to favor its development make it worthy of a report.

This recent epidemic of "dysentery" is by far the largest and most severe that has occurred here in many years. In the practice of one of us (L. E. Y.) dysentery was a common disease twenty-five or thirty years ago, during the summer and early fall. There were many sporadic cases, and at times the disease reached epidemic proportions. The number of cases lessened gradually each succeeding year until, in the last ten or fifteen years, the disease has been remarkable by its absence. There is little doubt that the disease in those days was true epidemic dysentery due to *B. dysenteriae*. Amebic dysentery is not known in this locality. Typhoid fever was endemic and epidemic then, and there is every reason to believe that true epidemic dysentery also occurred. The improvement in sanitation, the purification of water supplies, etc., which have done so much to lower the incidence of typhoid was undoubtedly responsible for the gradual disappearance of true dysentery among the general population.

There has persisted, however, a complex group of diarrheal diseases, somewhat indefinite as to etiology and known variously as dysentery, infectious diarrhea, summer diarrhea and ileocolitis. These cases occur largely in infants and occasionally in adults in a mild form, and are especially prevalent during late summer and early fall. In the light of recent investigations,[1] it is probable that in infants a large number of these cases, particularly the more severe, are due to *B. dysenteriae*. From our experience, however, we feel that this type of infection in recent years has been extremely rare in adults in this locality. Cases of diarrheal disease have, it is true, occurred during the summer in the adult population, but such cases are to be sharply differentiated from true bacillary dysentery. Weiss [2] has recently emphasized, more particularly in the case of adults, the distinction between true dysentery and what he calls infectious diarrhea, and in his article limits the term dysentery to those cases showing fever, tenesmus, and mucus and blood in the stools.

Besides the true dysentery due to *B. dysenteriae* there is some evidence to show that cases of diarrheal disease, sufficiently severe clinically to be classed as dysentery, may be due to other organisms. Besides the occurrence of such cases in infants, many cases in adults and even epidemics of such a nature have been reported. Thus, Morse and Tryon,[3] in 1917, reported an epidemic of diarrheal disease which occurred in the Boston State Hospital. While clinically the disease most resembled dysentery due to *B. dysenteriae* (Shiga), the causative agent was apparently an organism of the paratyphoid enteritis (Salmonella) group. They believe that to the gastro-enteric and typhoid-like forms of paratyphoid infections should be added a third, a dysenteric form. Sadler and Kelso,[4] in 1917, reported an epidemic of acute diarrhea, in some cases approaching mild dysentery. Examination of the stools in six cases yielded an organism of the dysentery group in but one instance, with findings in the other case of organisms of the *B. coli* group and organisms bearing a resemblance to the dysentery group. Bassett-Smith [5] has reported that cases sent to the Dreadnaught Hospital, at Greenwich, as dysentery often gave positive paratyphoid cultures. Miller [6] has stated that the most severe cases of dysentery occurring at the Red Cross Hospital at Netley were due to the paratyphoid bacillus. Kenny,[7] at the Canadian Red Cross Hospital at Taplow, describes the difficulty in distinguishing between paratyphoid fever and dysentery. Stolkind [8] states that in some cases *B. paratyphosus* B gives the picture of dysentery, clinically and pathologically. Thus there is some evidence to show that organisms of the enteric group may cause, at times, a disease closely resembling true bacillary dysentery. Except in infants, the evidence is not so convincing that other organisms not so closely allied to *B. dysenteriae* also may cause a disease similar to true dysentery. However, Ross and Peckham [9] have described the "enterococcus" as the cause of an epidemic of severe and fatal dysentery.

EPIDEMIOLOGY OF THE PRESENT EPIDEMIC

Last summer was marked by extreme heat and dryness, which persisted from the first of June until the first of September. The house fly, which in recent years had largely disappeared, was present this season in such numbers as to constitute a veritable pest. It is interesting in this connection to note the importance which some writers place on the fly as a carrier in cases of infectious diarrhea and dysentery. Cox, Lewis and Glynn [10] recovered bacteria, including bacilli of the Morgan group, from flies. They found that the number of organisms bore a direct relation to the sanitary conditions of the districts in which the flies were

1. Duval, C. W., and Bassett, V. H.: The Etiology of the Summer Diarrheas of Infants: A Preliminary Report, Am. Med. **4**: 417, 1912. Studies of the Rockefeller Institute for Medical Research, New York **1**, 1904. Vedder, E. B., and Duval, C. W.: The Etiology of Acute Diarrhea in the United States, J. Exper. Med. **6**: 181, 1902. Kendall, A., and Day, A. C.: Observations on Summer Diarrheas in Children, 1912, Boston M. & S. J. **169**: 754 (Nov. 20) 1913. Tenbroeck, C., and Norbury, F. G.: The Presence of B. Dysenteriae, B. Proteus Vulgaris, B. Welchii, and Morgan's Bacillus No. 1, in the Stools of Cases of Infectious Diarrhea, Boston M. & S. J. **173**: 280 (Aug. 19) 1915; B. Dysenteriae as a Cause of Infectious Diarrhea in Infants, ibid. **174**: 785 (June 1) 1916. Morse, J. L.: Infectious Diarrhea, Am. J. M. Sc. **149**: 17 (Jan.) 1915. Graham, D.: Some Points in the Diagnosis and Treatment of Dysentery Occurring in the British Salonika Force, Lancet **1**: 51 (Jan. 12) 1918. Sisson, W. R.: A Critical Review of Intestinal Bacteriology in Relation to Certain Diarrheas of Infants, Boston M. & S. J. **178**: 492 (April 11) 1918. Smillie, W. G.: The Epidemiology of Bacillary Dysentery, Am. J. Dis. Child. **13**: 337 (April) 1917. Davison, W.: Bacillary Dysentery in Children, Bull. Johns Hopkins Hosp. **31**: 225 (July) 1920.

2. Weiss, H.: On the Etiology of an Outbreak of Infectious Diarrhea, Arch. Int. Med. **28**: 137 (July) 1921.

3. Morse, M. E., and Tryon, G.: An Epidemic of Dysentery at the Boston State Hospital Due to a Member of the Paratyphoid-Enteritidis Group, Boston M. & S. J. **177**: 173 (Aug. 9), 216 (Aug. 16), 255 (Aug. 23) 1917.

4. Sadler, W., and Kelso, R. F.: An Epidemic of Acute Diarrhea Approaching in Some Cases a Mild Dysentery, J. Infect. Dis. **20**: 140 (Feb.) 1917.

5. Bassett-Smith, P. W.: Proc. Roy. Soc. Med. **9**, Med. Sect., 1915-1916.

6. Miller, C.: Proc. Roy. Soc. Med. **9**, Med. Sec., 1915-1916.

7. Kenny: Proc. Roy. Soc. Med. **9**, Med. Sect., 1915-1916.

8. Stolkind, E.: Proc. Roy. Soc. Med. **9**, Med. Sect., 1915-1916.

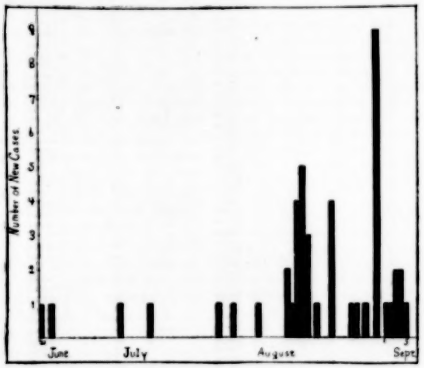
9. Ross, S. M., and Peckham, C. F.: The Enterococcus as a Factor in Certain Types of Dysentery, Lancet **1**: 1362 (June 26) 1920.

10. Cox, G. L.; Lewis, F. C., and Glynn, E. E.: The Numbers and Varieties of Bacteria Carried by the Common House Fly in Sanitary and Insanitary City Areas, J. Hyg. **12**: 290 (Oct.) 1912.

caught. Lucas and Amoss,[11] in this country, have recovered dysentery bacilli from flies caught in a house harboring a case of dysentery. Weiss [2] considers flies as a factor in the spread of infection during an epidemic of infectious diarrhea among our troops in France. In the consideration of the fly as a disseminator of disease, the recent work of Bishopp and Laake [12] is of great interest and importance. In a study of the direction, distance and speed of travel of flies from a point of liberation, these investigators have shown that they may spread in all directions, and in the case of the common house fly (*Musca domestica*) a spread of 13 1/10 miles is recorded. The tests have shown in some instances the remarkably rapid spread of 8 miles in less than one day.

The first case of which we have any knowledge appeared on the 23d of June and was followed by one on the 25th. A third case did not appear until July 9. It is impossible in an epidemic of this kind, of a non-reportable disease, occurring in a rural community, to determine exactly the chronological development of the cases, but it was apparently as above. After July 9, cases were observed by us at from two to fourteen day intervals until August 12, from which time one or more cases appeared at never less than three day intervals. It is probable that, including cases seen by others and mild cases, in which the patients were not sufficiently ill to call a physician, each day after the middle of July witnessed the development of new cases.

There was a tendency for the cases to occur in groups. For instance, August 12, we saw two new cases, and, August 14, 15 and 16, twelve new cases. August 30, two weeks later, we saw nine new cases. Coincident with the development of the twelve cases of August 14-16, there was a sudden change from the extreme heat to really cool weather. A like observation was made in regard to the development of the nine cases of August 30. Long ago, Ferguson [13] told of the influence of sudden cold weather during periods of extreme heat, as a factor in the incidence of dysentery. The accompanying chart is a graphic representation of the development of the cases chronologically.



Chronological development of new cases.

The epidemic presented no evidence of being water borne. The case incidence was higher on the farms with their separate water supplies than in the villages with their common supplies. The milk supply was equally innocent. There was no particular geographic relationship among the cases, and they occurred scattered evenly and generally throughout this locality; nor was there any definite relationship between the appearance of the cases geographically and chronologically.

No patient gave a history of having been outside the state, but opportunity for personal contact among the people of the whole community was excellent. Many meetings, picnics and celebrations furnished ideal opportunities for the spread of the infection by direct contact with mild cases and convalescent or well carriers.

Instances of multiple cases in individual homes were common. Cases 18 and 40 occurred in one house, as did Cases 28 and 29. Cases 20, 32, 33, 34, 35 and 36 occurred in one house in which three families were residing. In many instances there were several mild cases in families in which there was one severe case. In the majority of instances, when more than one case developed the onset of all was simultaneous. In a few instances the cases developed one after the other at intervals of from a few days to a week.

CLINICAL OBSERVATIONS

We have divided our cases into two groups. Group 1 consists of those cases of severe dysentery with fever, and blood and mucus in the stools. We observed forty-six cases of this type during the epidemic. Group 2 consists of those cases which were mild and which did not show all the triad of symptoms mentioned above, but which did show some symptoms sufficiently characteristic of this disease (especially during an epidemic) to warrant inclusion in this report. The number of cases in the second group is estimated at 120. The number is only estimated, as not all these cases were seen by us personally, knowledge of them being obtained in various ways. Many of the patients in Group 2 did not consider themselves sufficiently ill to call a physician.

In the accompanying table are presented all the cases which are classified in Group 1. All the cases in this group showed the same clinical picture: The onset was acute and sudden, with fever and malaise, with or without vomiting, usually with abdominal pain and with a profuse diarrhea, with a movement, frequently, every half hour. The stools, at first liquid and fecal in character, by the second day consisted of small amounts of blood-stained mucus and clots of fairly bright red blood. Tenesmus, which occurred to a moderate degree in practically every case, was marked in but one instance.

Abdominal pain was present in practically every case. It was never very severe, and there was never found associated with it any abdominal tenderness or muscular rigidity. Pain of an arthritic or rheumatic type was present in a large percentage of the cases, and constituted one of the most interesting observations of the epidemic. It frequently shared honors with the diarrhea as the chief complaint of the patient. It was definitely rheumatic in character, such as is associated

11. Lucas, W. P., and Amoss, H. L.: Vaccine Treatment in the Prevention of Dysentery in Infants, J. Exper. Med. **13**: 486 (May) 1911.
12. Bishopp, F. C., and Laake, E. W.: Dispersion of Flies by Flight, J. Agric. Res. **21**: 729 (Aug. 15) 1921.
13. Ferguson, cited by Sandwith, F. M.: The Lettsomian Lectures on Dysentery, Lancet **2**: 637, 683, 731, 785, 1914.

with influenzal infections, and was general throughout the body. Osler states that Sydenham described pain of this character occurring in dysentery.

The temperature usually ranged between 101 and 102 F. In a few cases, particularly among children, it was higher. In Case 1 it reached 105.

It will be seen from the table that the age incidence includes cases at all ages except infants under 2 years.[14] The most severe cases occurred in young children and in old persons. While the cases in young children cleared up promptly, there seemed to be a tendency for the disease to last longer in the aged.

The course of the disease appeared to be self limited in the great majority of cases. For a few days the patients appeared severely ill, there was marked prostration, and the diarrhea continued, with frequent passages of small amounts of blood and blood-stained mucus. Then the fever dropped suddenly, and recovery commenced and was rapid. From three to four days was the average duration of the fever, abdominal pain and blood in the stools. A mild diarrhea and some weakness usually persisted up to a week. Weakness was the most persistent symptom, and frequently outlasted the diarrhea by several days. In a few Cases (8, 18, 21 and 28) the diarrhea persisted for from seven days to two weeks, but in no case did the appearance of blood in the stools last more than four days. The longer duration of symptoms in the cases just mentioned seemed to be due to the fact that these patients remained up and about, and it was noticed that such cases occurred in patients of advanced age. There were no deaths.

There were few complications. Patient 24 developed a rectal prolapse. In Case 11 there was rather a severe delirium, and Patient 9 had convulsions at the onset. Patient 18 was eight and one-half months pregnant, and had a premature labor. She is one of the few patients in whom the diarrhea was longer than a few days, lasting in her case about two weeks. Patient 22 was three months pregnant, but there was no abortion. Patient 43 developed symptoms of intestinal obstruction a week or so after recovery.

The cases in Group 2 resembled those in Group 1 considerably, but they were much less severe. Some of these patients had fever, and some had mucus in the stools. All had a diarrhea of moderate severity. Many complained of the abdominal pain; and, in some cases, pain of a rheumatic type already described, together with a diarrhea, constituted the entire clinical picture. Headaches and malaise were common. The mild cases often occurred in families in which there were cases of the greatest severity.

CASES IN GROUP 1

Case	Age, Years	Onset	Fever	Vomiting	Abdominal Pain	Arthritic Pain	Bowel Movements	Blood	Mucus	Course	Complications and Comment
1	12	6/23	+	0	+	0	12-15	+	+	Typical	
2	30	6/25	+	+	0	+	12-20	+	+	Typical	
3	35	7/ 9	+	0	0	+	10-15	+	+	Typical	
4	30	7/15	+	0	+	+	8-10	+	+	Typical	
5	48	7/29	+	+	+	+	15-20	+	+	Typical	
6	18	8/ 1	+	0	+	+	12-15	+	+	Typical	
7	3	8/ 6	+	+	+	0	20-25	+	+	Typical	
8	68	8/12	+	+	+	+	10-15	+	+	10 days	
9	4	8/12	+	+	+	0	8-10	+	+	Typical	
10	75	8/13	+	0	0	+	15-20	+	+	Typical	Convulsions and delirium
11	3	8/14	+	+	+	0	15-20	+	+	Typical	Delirium
12	4	8/14	+	+	+	0	10-15	+	+	Typical	
13	3	8/14	+	+	+	0	10-15	+	+	Typical	
14	7	8/14	+	0	+	0	8-10	0	+	Typical	
15	35	8/15	+	0	+	+	12-15	+	+	Typical	
16	25	8/15	+	0	+	+	12-15	+	+	Typical	
17	21	8/15	+	+	+	+	8-10	+	+	Typical	
18	40	8/15	+	+	+	+	15-20	+	+	2 weeks	Pregnancy; premature labor; delirium
19	72	8/15	+	0	+	+	10-12	+	+	Typical	
20	28	8/16	+	0	0	+	15-20	+	+	Typical	
21	73	8/16	+	+	+	+	10-15	+	+	10 days	Auricular fibrillation
22	25	8/16	+	0	+	+	8-10	0	+	Typical	
23	20	8/18	+	+	+	0	20-30	+	+	Typical	
24	8	8/21	+	0	+	0	15-20	+	+	10 days	Severe tenesmus with rectal prolapse
25	65	8/21	+	0	0	+	15-20	+	+	Typical	
26	12	8/21	+	+	+	0	8-10	0	+	Typical	
27	35	8/21	+	0	+	+	10-15	+	+	Typical	
28	74	8/25	+	0	+	+	20-25	+	+	2 weeks	Marked weakness
29	65	8/26	+	0	+	+	12-15	+	+	Typical	
30	13 mo.	8/28	+	0	?	?	8-12	+	+	Typical	
31	11	8/30	+	+	+	0	15-20	+	+	Typical	
32	10	8/30	+	+	+	0	15-20	+	+	Typical	
33	15	8/30	+	+	+	+	15-20	+	+	Typical	
34	13	8/30	+	+	+	0	15-20	+	+	Typical	
35	3	8/30	+	+	+	0	15-20	+	+	Typical	
36	11	8/30	+	+	+	0	15-20	+	+	Typical	
37	5	8/30	+	+	+	0	15-20	+	+	Typical	
38	3	8/30	+	+	+	0	15-20	+	+	Typical	
39	9	8/30	+	+	+	0	15-20	+	+	Typical	
40	40	9/ 1	+	+	+	+	15-20	+	+	Typical	
41	30	9/ 2	+	0	+	+	15-20	+	+	Typical	
42	75	9/ 3	+	0	+	+	12-15	+	+	Typical	
43	72	9/ 3	+	0	+	+	12-15	+	+	Typical	
44	36	9/ 4	+	0	+	+	20-25	+	+	Typical	
45	47	9/ 4	+	+	+	+	10-12	+	+	Typical	
46	45	9/ 5	+	0	+	+	8-10	+	+	Typical	

LABORATORY FINDINGS

Opportunity for suitable laboratory investigation was lacking. Typical stools from five cases (32, 34, 36, 38 and 43) during the acute stage were sent to the State Laboratory of Hygiene for examination. The specimen from Case 43 was delayed in transit, and on arrival was too old for a satisfactory examination. A careful examination of the other specimens failed to yield any organisms of the enteric or dysentery groups; nor were any organisms isolated which, it was thought, played an etiologic rôle in the disease. Unfortunately, tests of the agglutinative properties of the blood of

14. With one exception, Case 30.

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patients against known strains of organisms were not made.

SUMMARY AND COMMENT

In an epidemic of acute dysentery occurring in a rural community there were forty-six cases of a severe type with fever, mucoid and bloody stools, tenesmus and pain. There were 120 cases of a milder type. There were no deaths, few complications and no sequelae.

There is no evidence that the water supply was implicated in the spread of the disease. The presence of an unusual number of flies throughout the summer is assumed by us to have a bearing on the spread of the infection. It is probable that flies and contact with patients having the disease and with convalescent or well carriers were the principal means of spreading the infection. The extreme heat and dryness probably played a part in the incidence of the disease, and favored the spread of the infection. Sudden, severe changes in the temperature, which occurred twice during the epidemic, seemed to us to have some influence on the development of new cases.

The disease is separated from the group of "infectious diarrheas" by its severity. It most resembles true epidemic dysentery due to *B. dysenteriae*, especially in the wide range of age incidence. It lacked, however, the duration and the mortality. In the vast majority of cases it was limited to three or four days. There were no deaths. Dystentery due to the dysentery bacillus is a disease of from three to four weeks' duration, and the mortality rate is fairly high. Nor did it show the sequelae of subacute or chronic dysentery or diarrhea. It seems scarcely possible that an epidemic of true bacillary dysentery as large as this would fail to leave any sequelae of that nature, yet there has not been a single occurrence of that kind in this epidemic.

Examination of satisfactory specimens of stools in four cases failed to yield *B. dysenteriae*, allied groups, or any other organisms which were considered to be an etiologic agent. Considerable doubt may reasonably be thrown on the bacteriologic findings because of the fact that the specimens were of necessity shipped a considerable distance, with possible consequent change in flora. We also realize that examinations were made in too few cases to warrant any conclusions being drawn as to the presence of a possible etiologic agent.

Industrial Home Work of Children.—The Department of Labor has published a report on "Industrial Home Work of Children," based on a study of this subject in three Rhode Island cities. It was found that at least 5,000 children under 16 years of age had done home work in the course of a year. Of 2,338 children who had worked at least a month out of the year, 4 per cent. were under 6 years of age, and 46 per cent. were under the age of 11. The inquiry covered 153 industrial establishments. The principal kinds of work done at home by children were: stringing tags, drawing threads from lace, linking and wiring rosary beads, setting stones in jewelry, carding snaps, and assembling military buttons. At the rates paid, four-fifths of the 956 children who reported earnings could not make as much as 10 cents an hour working at top speed. Of the families reporting total yearly earnings from home work, almost nine-tenths earned less than $100, and about three-fifths earned less than $25, which sums in nearly all cases represented compensation for more than one person. A possible danger to the health of the community was found in that many families reporting did work while members of the family were ill with infectious disease, and in some cases the sick persons took part in the work. The report states that manufacturers using the home-work system indicated the system could be abolished with little loss to business.

Clinical Notes, Suggestions, and New Instruments

BULLET WOUNDS: THEIR INTERPRETATION

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The determination of the course of a bullet is frequently of as vital importance to the operating surgeon as it is to the medicolegal expert, and occasions will arise when the obtaining of a roentgenogram prior to operation is impossible. Careful study of the wound will, however, give the desired information in a large proportion of cases.

A bullet at long range, uninterrupted in its flight by any object of sufficient density to deflect it, and striking the skin at right angles, will leave a round wound with seared edges but without brush-burn. It makes a hole in the skin over soft parts that is approximately one half the diameter of the caliber of the bullet, if it enters at right angles to the presenting surface.

If the missile strikes the skin at an acute angle to the presenting surface, the tissue will be pushed up in front of the bullet until enough has been crowded up to permit of its penetration, and as it skids or slides on the skin before entering, it will cause a brush-burn on that side of the wound from which the bullet came. The brush-burn will vary in length with the angle at which the bullet struck the skin. Hence, the longer the brush-burn, the shallower the penetration. An imaginary line drawn through the center of the brush-burn and the center of the opening at which the bullet entered will give the course of the bullet within the body. To illustrate: If the brush-burn is on the right side of the opening, the bullet came from the right and its course is toward the left; and if it is on the left, the course is toward the right.

Steel-jacketed and cupronickel lead filled bullets will travel straight ahead, and are not deflected when striking bone equally on all sides, until their force is all expended. Should they hit bone on only one side of the bullet, as a bullet clipping the edge of a rib in passing, that bullet will be deflected toward the side meeting the greater resistance, i. e., the side striking bone.

Lead bullets may or may not be deflected in their course, depending on the resistance of the bone encountered. When striking hard bone in their course, particles of lead are likely to be found along the tract.

Bullet wounds, when the muzzle of the gun is held against the skin or clothing, are called contact wounds. Here the bullet usually enters at right angles to the presenting surface. The point of entrance may be large enough to be mistaken for a point of exit, but is surrounded by a blackened ring which is made by some of the exploding gases escaping between the end of the barrel and the surface to which it was pressed. These wounds are of such character that it is difficult to determine whether they are wounds of entrance or exit until one has demonstrated the absence or presence of powder or smudge on the skin, or until the tissues are explored for powder grains. Gas wounds are contact wounds, and are gaping, extensive, ragged-edged wounds into which the exploding gases have entered the opening made by the bullet and undermined the tissues, scorching and tearing them apart, and usually occur where there are layers of soft tissues overlying dense bone, as in the scalp.

When a gun is exploded within short range of the skin or clothing, the characteristic odor of exploded powder persists, and the powder or smudge deposit on the skin or clothing indicates the direction the bullet took, the greater amount being on the side of the point of entrance of the bullet opposite from which the bullet came, as has been pointed out by Hamilton and Wadsworth.

Revolvers in common use, 0.25, 0.32, 0.38 and 0.45 calibers, flash about 4, 5, 7 and 9 inches, respectively. Black powder gives the greater amount of smudge and unexploded powder grains. If the gun is held in contact with the skin or cloth-

ing, a blackened ring will be formed about the wound. If the gun is held away from the skin or clothing, but near enough to be within the zone of igniting gases, the flash will make an area of smudge and powder marks. This area will be of deeper color and smaller diameter, the closer the gun is held, and will gradually increase in diameter and lessen in density up to the point of the greatest flash of the gun. As the distance the gun is held from the object increases, beyond the point of greatest flash, the powder and smudge area decreases in size, but differs from the closer range in that the color of the smudge area is lighter. If the skin or clothing is within the area of igniting gases, it will be scorched, and the skin will have the appearance of the rind of smoked ham. The greatest diameter of the flash of the igniting gases of the 0.25, 0.32, 0.38 and 0.45 caliber revolvers is from 2¾ to 3¼, 3½ to 4, 4½ to 5 and 5½ to 6 inches, respectively.

If this article serves its purpose, it will deter the intern from probing wounds and, for the purpose of testimony, will stimulate him to make notes as to the presence or absence of smudge or powder marks about these wounds.

The data presented here have been worked out and found of value in the Kings County morgue, where I have worked in conjunction with Dr. W. W. Hala, pathologist of Kings County Hospital, and Dr. Carl Boettiger, assistant medical examiner of Kings County.

44 Court Street.

PNEUMATIC RUPTURE OF THE INTESTINE

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Rupture of the intestine from the introduction of compressed air into the rectum was first described by Andrews[1] in 1911, and since then additional cases have been reported by Bendixen and Blything[2] and by Buchbinder.[3] These authors have published their own case reports, including twenty-two unpublished cases, making a total of twenty-five cases of this unusual injury described in the literature. On account of the relative infrequency of this lesion, I will place on record an additional case.

History.—J. H. P., aged 35, had become covered with sawdust in the course of his work as a carpenter. One of his companions was dusting his clothes off with compressed air, and had jokingly turned the nozzle toward the patient's rectum. The nozzle was not placed against his body, but in moderate proximity, possibly an inch or so away. The nozzle was three-fourths inch in diameter, and the hose ordinarily carried 70 pounds pressure; but at this time the pressure was supposed to be only about one-fourth on, being approximately 20 pounds. Immediately following the entrance of the air into the rectum the patient collapsed, falling to the floor and complaining of severe abdominal pain. While he was being transferred to the hospital he had a bowel movement.

Examination.—On admission, Oct. 23, 1921, at 5 p. m., the patient was in extreme shock and was complaining of severe abdominal pain. His face had a pinched expression and was slightly cyanotic. The pulse was 74, the respiration, 24; the temperature, 98.4. He complained of severe pain in the right lower quadrant of the abdomen. There was no distention, but moderate rigidity on both sides, more marked on the right. Peristalsis was entirely absent; there was no increased tympany. Breathing was costal in character. There was marked tenderness to pressure on both sides of the abdomen. An examination of the rectum disclosed no external evidences of injury, such as bruising or hemorrhage. Immediately after being placed in bed, the patient passed a considerable amount of gas. The white blood count at 5:20 was 12,500, with polymorphonuclears, 77 per cent.; the white blood count at 8 o'clock had gone up to 17,000 with polymorphonuclears, 95 per cent. A rectal tube was passed at 8:15, when a small amount of gas came away. On removal of the tube, some bloody mucus was noted. About 8:30, the patient had a well formed bowel movement, and he expelled considerable gas and also vomited. At 9, the white blood count was 18,000, with polymorphonuclears 94 per cent. The pulse rate had increased from 74 to 100; the respiration was 22; the temperature was 98.6. At 10 o'clock, examination of the abdomen revealed marked rigidity on both sides, slightly more pronounced on the right. He was still complaining of severe pain in the lower right quadrant, with marked tenderness over the same area. There was as yet no distention of the abdomen. The percussion note was slightly tympanitic, and no peristalsis was heard. There was no evidence of subcutaneous emphysema.

Operation.—Between 10:20 and 11:20 p. m., Drs. Kistler, MacPherson and Schwartz operated. Under ether anesthesia a median abdominal incision was made. When the peritoneum was opened, a considerable quantity of bright red blood escaped. There was no gas in the abdominal cavity. There was no odor, and there were no bowel contents spilled into the peritoneal cavity. The cecum was distended to approximately twice its normal size. The serosa showed multiple small lacerations, and certain areas were "ribboned," giving the appearance of a spider-web formation. There was no rupture through all the coats of the bowel. The cecum was markedly discolored, the serosa and subserosa being infiltrated with blood which was still quite bright red. These discolored areas were edematous, and involved the lower portion of the ascending colon from the ileocecal junction half way up to the hepatic flexure. There was no discoloration, edema or other evidence of injury of the small intestine. Examination of the sigmoid and upper portion of the rectum revealed a laceration through the serosa and subserosa 3 inches long and from one-third to one-half inch in width. It was in the midline of the sigmoid and upper rectum, where the peritoneum is reflected from the bladder. There was no rupture of the inner coats of the bowel. The mucosa bulged through the laceration of the external coats. The laceration of the serosa and subserosa over the sigmoid was sutured with fine catgut. There was some hemorrhage into the serosa in this region, not as marked, however, as at the cecum. The edema was also less in amount here. The upper sigmoid and descending colon were not affected, and in following up the colon no further injury was found until the midregion of the transverse colon was reached. From here to the hepatic flexure the serosa was hemorrhagic. The edema and ecchymoses were less than in the cecum. After a careful sponging out of bloody fluid from the general cavity, an appendicostomy was done. The appendix was brought out through a small puncture wound in the lower right quadrant. A catheter was inserted through the appendix into the cecum. The median incision was closed with plain catgut and silkworm-gut without drain.

Postoperative Course.—October 24, the maximal pulse was 118; temperature, 100.8 by mouth; respiration, 24. At 1:30 p. m. the patient had a spell of hiccuping lasting half an hour. There was no vomiting; some gas was passed by way of the rectal tube. The abdomen was not distended. October 25, the highest pulse rate was 100; temperature, 99; respiration, 20. The patient's general condition was somewhat improved. He had a little pain in the lower right quadrant. There was no distention of the abdomen, no vomiting, and no further hiccuping. Five hundred cubic centimeters of saline solution was given intravenously. October 26, the condition was just about the same as the day previous. Five hundred cubic centimeters of saline was given intravenously. October 27, weak peristalsis was heard over the abdomen, and the patient passed a little gas by rectum. He was given sips of water by mouth and glucose solution by rectum. October 30, the condition was improved. The drainage tube was removed from the appendicostomy. The patient had a fairly normal bowel movement. From this time on his convalescence was normal and uninterrupted until November 10, when for a period of three days he had some fever, the maximum being 102.6. The pulse went as high as 94. He

1. Andrews, E. W.: Pneumatic Rupture of the Intestine, a New Type of Industrial Accident, Surg., Gynec. & Obst. **12**:63 (Jan.) 1911.
2. Bendixen and Blything: Pneumatic Rupture of Bowel, Surg., Gynec. & Obst. **18**:73 (Jan.) 1914.
3. Buchbinder, J. R.: Pneumatic Rupture of Intestine, J. A. M. A. **76**:518 (Feb. 19) 1921.

had some chills, with intermittent fever and headache. At this time there was considerable increase in drainage from the appendicostomy wound. Then he had an uninterrupted recovery, and was discharged from the hospital, November 27. After leaving the hospital the patient complained of considerable weakness; he tired very easily; he had some shortness of breath and persistently rapid pulse, from 100 to 120. April 1, 1922, he felt somewhat improved, though still unable to do his usual work. His pulse remains somewhat rapid.

Murray Hospital.

A MODIFICATION OF HALL'S ANAEROBIC CULTURE TUBE *

W. L. HOLMAN, M.D., Stanford University, Calif.

There have been many attempts to simplify the technic for growing anaerobic bacteria in fluid mediums. In 1890, Theobald Smith [1] used small pieces of rabbit's liver in the constriction of the tubes known today as the Smith fermentation tubes, and obtained good anaerobic growth in the closed arm. Rivas,[2] in 1902, described a straight tube with a twisted constriction about the middle, and oil for the seal at this constriction. He also used ammonium hydrosulphid in the broth. This was a decided improvement over the straight walled tube with oil on the surface, as used by Hesse [3] in 1885. I had occasion to try the Rivas method while studying the anaerobes of wounds in the Robert Walton Goelet Research Laboratories at Ris Orangis and Paris in 1916-1917. I found that the constriction by itself delayed the reabsorption of oxygen after boiling, and I obtained anaerobic growth in these tubes and negative results in the straight walled control tubes, despite the fact that the tubes I used were smooth at the constriction and not twisted. The mechanical factors used to establish anaerobic conditions had also been emphasized by the work of Ori [4] and of Wrzosek,[5] and the use of brain and meat mediums,[6] which has become more or less general since the war. I first learned of Hall's constricted tube with a mechanical seal through Kendall in 1919, having overlooked Hall's [7] article, which appeared in 1915.

Modification of Hall's anaerobic culture tube.

Hall's use of the mechanical seal transformed the method, and has so simplified the anaerobic technic that it is available for use in every bacteriologic laboratory. I reported my modification in the body of a paper at the meeting of the American Association of Pathologists and Bacteriologists in 1919, and have continued to use it successfully for the last three years.

In place of the marble or other seal, I use a smaller test tube, which fits the constriction in the ordinary Roux potato tube. This inner tube is half filled with the medium and can be seeded at the same time as the large tube. It thus serves as a ready control for the presence of aerobic forms and contaminations. The inner tube can be readily lifted by forceps or the needle loop after seeding or when examining the growth, and can be removed when the entire culture is to be used. The obtaining of the increased surface tension at the point of the seal is practically the same as with the original method, and I have had excellent results in the growth of a great variety of anaerobic bacteria. I have used Roux tubes of three-fourths inch (17 mm.) diameter, measuring about 4 inches (100 mm.) above the constriction and about 1½ inches below. The inner seal tube is one-half inch in diameter and 2½ inches long. A lip makes it easier to handle.

The advantages of my modification are:

1. It offers an additional check on the culture in the same apparatus.

2. The inner tube is more readily handled than is a marble or disk.

3. It is cheaper. The tubes used, being in most laboratories, are easily arranged for this special purpose.

* From the Department of Bacteriology and Experimental Pathology, Stanford University.

1. Smith, Theobald: Centralbl. f. Bakteriol. **7**: 502, 1890.
2. Rivas, D.: Centralbl. f. Bakteriol., Orig. **32**: 831, 1902.
3. Hesse, W. and R.: Deutsch. med. Wchnschr., 1885, No. 14, p. 214.
4. Ori, quoted by Wrzosek (Footnote 5).
5. Wrzosek, A.: Centralbl. f. Bakteriol., Orig. **43**: 17, 1907.
6. Holman, W. L.: J. Bacteriol. **4**: 149, 1919.
7. Hall, I. C.: Univ. California Pub. in Pathology **2**: 147, 1915; J. Infect. Dis. **29**: 317 (Oct.) 1921.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

POLLEN DIAGNOSTICS-LEDERLE.—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent. glycerin and 33 per cent. saturated solution of sodium chloride. Pollen Diagnostics-Lederle are marketed in capillary tubes containing 0.01 Cc. of a liquid which represents 100 pollen units.

Actions and Uses.—Pollen Diagnostics-Lederle are employed for the diagnosis of hay fever (pollinosis). See New and Nonofficial Remedies, 1922, page 232, "Pollen and Epidermal Extract Preparations and Biologically Reactive Food Proteins."

Dosage.—Contents of one capillary tube, cutaneously or intradermally.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Arizona Ash Diagnostic-Lederle: Prepared from the pollen of Arizona ash (*Fraxinus toumeyi*).

Arizona Walnut Diagnostic-Lederle: Prepared from the pollen of Arizona walnut (*Juglans major*).

Black Walnut Diagnostic-Lederle: Prepared from the pollen of black walnut (*Juglans nigra*).

Careless Weed Diagnostic-Lederle: Prepared from the pollen of careless weed (*Amaranthus palmeri*).

Cottonwood Diagnostic-Lederle: Prepared from the pollen of cottonwood (*Populus macdougalii*).

June Grass Diagnostic-Lederle: Prepared from the pollen of June grass (*Poa pratensis*).

Ragweed Diagnostic-Lederle: Prepared from the pollen of ragweed (*Ambrosia elatior*).

Red Top Diagnostic-Lederle: Prepared from the pollen of red top (*Agrostis palustris*).

Sage Brush Diagnostic-Lederle: Prepared from the pollen of sage brush (*Artemisia tridentata*).

Shad Scale Diagnostic-Lederle: Prepared from the pollen of shad scale (*Atriplex canescens*).

Sheep Sorrel Diagnostic-Lederle: Prepared from the pollen of sheep sorrel (*Rumex acetosella*).

Slender Ragweed Diagnostic-Lederle Prepared from the pollen of slender ragweed (*Franseria tenuifolia*).

Sweet Vernal Grass Diagnostic-Lederle: Prepared from the pollen of sweet vernal grass (*Anthoxanthum odoratum*).

Timothy Diagnostic-Lederle: Prepared from the pollen of timothy (*Phleum pratense*).

Pollen antigens-Lederle are prepared by grinding the dried pollen with glass dust in a mortar for 2.5 hours, using a diluent composed of 67 per cent. glycerin and 33 per cent. saturated sodium chloride solution to moisten the pollen. Then sufficient of the glycerin-sodium chloride solution is added so that the total volume is such that 1 Cc. is equivalent to approximately 14,000 pollen units, the pollen unit having been arbitrarily chosen as the equivalent of 0.001 mg. of pollen. This mixture is shaken for 30 minutes and then kept at 37 C. for 16 hours. It is then shaken for 1 hour, centrifugalized and passed through Buckner and Berkefeld filters.

Pollen antigens-Lederle are standardized by the complement fixation method to determine the active antigenic power of their protein content. Immune serum is obtained from rabbits which have been immunized with a gradually increasing number of units of pollen. Using the same technic for complement fixation as that adopted by the Research Laboratories for the Department of Health, New York, one pollen unit is found to be equivalent approximately to 1-20 of a unit of antigen, taking a unit of antigen as the smallest amount that gives complete fixation in the hemolytic series.

Definite Minimum Fee Excludes Some Patients.—The man who charges a definite minimum fee for his services automatically excludes a class who are in need of his help but who cannot afford his services. He excludes a class who judge of the value of service by the price paid.—P. J. Flagg, *Hosp. Prog.* **3**:143 (April) 1922.

PROCEEDINGS OF THE ST. LOUIS SESSION

MINUTES OF THE SEVENTY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ST. LOUIS, MAY 22-26, 1922

(*Concluded from page 1720*)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 24—AFTERNOON

The section was called to order at 2:05 by the chairman, Dr. Lewellys F. Barker, Baltimore.

Dr. Stewart R. Roberts, Atlanta, Ga., read a paper on "A Study of Hypotension." Discussed by Drs. George Dock, St. Louis; John Phillips, Cleveland; John G. McLaurin, Dallas, Texas; Louis F. Bishop, New York; Alexander Lambert, New York; Loyd Thompson, Hot Springs, Ark.; Elsworth Smith, St. Louis, and Stewart R. Roberts, Atlanta, Ga.

Dr. Walter L. Bierring, Des Moines, Iowa, introduced the following resolution:

WHEREAS, It has always been the right of the Scientific Sections to have representation through a properly constituted delegate for the purpose of correlating with the aims and purposes of the Association, the special interests of each individual section, and

WHEREAS, The section delegates contribute to the deliberations of the House of Delegates, the crystallized opinions which have evolved from the scientific proceedings of each particular section, and

WHEREAS, This is the only point of immediate contact of the great mass of the Fellows of the American Medical Association who assemble at our annual session, with the legislative body—the House of Delegates; therefore, be it

Resolved, That we, members and Fellows of the Association, assembled in a meeting of the Section on Practice of Medicine, do hereby protest against this attempt to completely separate the scientific from the legislative branch of the Association.

After discussion, the resolution was adopted.

Dr. Lester J. Palmer, Seattle, read a paper on "Wassermann Variations: A Study of the Serums of Seventy-Five Patients by Eight Laboratories." No discussion.

Dr. S. Calvin Smith, Philadelphia, read a paper on "Observations on the Heart in Mothers and the New-Born." Discussed by Drs. Alexander Lambert, New York; L. F. Bishop, New York, and S. Calvin Smith, Philadelphia.

Dr. John Phillips, Cleveland, read a paper on "The Relation Between Migraine and Epilepsy." Discussed by Drs. Julius Grinker, Chicago, and John Phillips, Cleveland.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Walter W. Hamburger, Chicago, read a paper on "Quinidin Treatment of Auricular Fibrillation." Discussed by Drs. Fred M. Smith, Chicago; John Wyckoff, New York; Arthur E. Strauss, St. Louis; Alexander Lambert, New York; Louis F. Bishop, New York, and Walter W. Hamburger, Chicago.

Dr. John W. Flinn, Prescott, Ariz., read a paper on "Medical Technic." Discussed by Drs. Willard J. Stone, Pasadena, Calif., and W. S. Thayer, Baltimore.

Dr. C. Lee Graber, Cleveland, read a paper on "Obesity, Its Cause and Rational Treatment." Discussed by Drs. Lulu Hunt Peters, Los Angeles, and C. Lee Graber, Cleveland.

THURSDAY, MAY 25—AFTERNOON

The section was called to order by the chairman at 2:05.

The following officers were elected: chairman, Dr. Nellis B. Foster, New York; vice chairman, Dr. Alfred Friedlander, Cincinnati; secretary (for three years), Dr. Eugene S. Kilgore, San Francisco; delegate, Dr. Walter L. Bierring, Des Moines, Iowa; alternate, Dr. Stewart R. Roberts, Atlanta, Ga.

Dr. Loyd Thompson, Hot Springs, Ark., introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology. After discussion by Drs. C. F. Hoover, Cleveland; Loyd Thompson, Hot Springs, Ark.; Alexander Lambert, New York; Kennon Dunham, Cincinnati, and Albert Fuller, Cincinnati, the motion was put and lost.

Dr. Alfred Friedlander, Cincinnati, read a paper on "Syphilis of the Lung." Discussed by Drs. Harlow Brooks, New York; Kennon Dunham, Cincinnati, and W. S. Thayer, Baltimore.

Dr. Willard J. Stone, Pasadena, Calif., read a paper on "The Treatment of Tetanus." Discussed by Drs. Abraham Zingher, New York; Richard H. Miller, Boston; Alexander Lambert, New York; A. A. Herold, Shreveport, La.; W. T. Coughlin, St. Louis; Mary Freeman, Perrine, Fla., and Willard J. Stone, Pasadena, Calif.

Dr. Leo Kessel, New York, read a paper on "An Evaluation of Therapeutic Procedures and the Discussion of the Pathogenesis of Grave's Syndrome." Discussed by Drs. C. F. Hoover, Cleveland; A. S. Blumgarten, New York; H. T. Hyman, New York; Joseph C. Aub, Boston, and Leo Kessel, New York.

Dr. J. Marion Read, San Francisco, read a paper on "Relation of the Pulse Rate and Pulse Pressure to Basal Metabolism." Discussed by Drs. Walter M. Boothby, Rochester, Minn., and J. Marion Read, San Francisco.

Dr. William A. Jenkins, Louisville, Ky., read a paper on "Myocarditis and Its Management." Discussed by Drs. L. F. Bishop, New York; W. E. Simmonds, Chicago, and William A. Jenkins, Louisville, Ky.

Dr. James S. McLester, Birmingham, Ala., read a paper on "The Diagnostic Value of Blood Fibrin Determinations, with Special Reference to Disease of the Liver." No discussion.

Drs. Russell L. Cecil and N. P. Larsen, New York, presented a paper on "Study of a Thousand Cases of Pneumonia in Bellevue Hospital." Discussed by Drs. F. C. Huntoon, Glenolden, Pa.; Nellis B. Foster, New York; Willard J. Stone, Pasadena, Calif.; Mary Freeman, Perrine, Fla.; Alexander Lambert, New York, and Russell L. Cecil, New York.

FRIDAY, MAY 26—AFTERNOON

A joint meeting was held with the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology.

The meeting was called to order at 2 o'clock by the chairman of the Section on Pharmacology and Therapeutics, Dr. Carl Voegtlin, Washington, D. C.

The following papers were read as a symposium on "Internal Secretions":

Dr. Lewellys F. Barker, Baltimore: "Endocrinology" (address of chairman, Section on Practice of Medicine).

Dr. Walter B. Cannon, Boston: "Conditions Controlling Internal Secretion."

Dr. Joseph C. Aub, Boston: "Metabolic Effects of the Glands of Internal Secretion."

Dr. A. J. Carlson, Chicago: "Hypofunction and Hyperfunction of the Glands of Internal Secretion."

Dr. R. G. Hoskins, Columbus, Ohio: "Principles of Endocrinology Applicable to Organtherapy."

These five papers were discussed by Drs. William Engelbach, St. Louis; L. G. Rowntree, Rochester, Minn.; Walter M. Boothby, Rochester, Minn.; Walter Timme, New York; A. S. Blumgarten, New York; Louis B. Wilson, Rochester, Minn.; Walter B. Cannon, Boston; Joseph C. Aub, Boston; A. J. Carlson, Chicago; Lewellys F. Barker, Baltimore, and R. G. Hoskins, Columbus, Ohio.

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SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Wallace I. Terry, San Francisco.

Dr. Burton J. Lee, New York, read a paper on "The Treatment of Recurrent Inoperable Carcinoma of the Breast by Means of Radium and Roentgen Ray."

Dr. James T. Case, Battle Creek, Mich., read a paper on "The New Short Wave Length Roentgen-Ray Therapy."

These two papers were discussed by Drs. George E. Pfahler, Philadelphia; Thomas A. Groover, Washington, D. C.; Joseph C. Bloodgood, Baltimore; Carl Beck, Chicago; John J. Gilbride, Philadelphia; W. D. Haggard, Nashville, Tenn.; J. H. Schroeder, Cincinnati; Burton J. Lee, New York, and James T. Case, Battle Creek, Mich.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Richard H. Miller, Boston, read a paper on "The Treatment of Tuberculous Cervical Adenitis." Discussed by Drs. Harry G. Sloan, Cleveland; Frank H. Lahey, Boston, and Richard H. Miller, Boston.

Dr. T. Turner Thomas, Philadelphia, read a paper on "The Immediate Closure Without Drainage of the Usual Compound Fracture of the Leg." Discussed by Drs. Fordyce B. St. John, New York; Fred W. Bailey, St. Louis; W. T. Coughlin, St. Louis; Florus F. Lawrence, Columbus, Ohio; Isidore Cohn, New Orleans; H. W. Orr, Lincoln, Neb.; Daniel F. Jones, Boston; William Fuller, Chicago; Dennis W. Crile, Chicago, and T. Turner Thomas, Philadelphia.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Frederic W. Bancroft, New York, read a paper on "The Fate of the Necrosed Bone in Chronic Osteomyelitis." Discussed by Drs. Dennis W. Crile, Chicago; Barney Brooks, St. Louis; Albert J. Ochsner, Chicago; LeRoy Sante, St. Louis; T. Turner Thomas, Philadelphia, and Frederic W. Bancroft, New York.

Dr. Rea Smith, Los Angeles, read a paper on "The Surgical Relief of Intestinal Foci of Infection in Cases of Arthritis Deformans." Discussed by Dr. E. D. Twyman, Kansas City, Mo.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9 o'clock by the vice chairman, Daniel F. Jones, Boston.

Dr. Wallace I. Terry, San Francisco, read the chairman's address.

The following officers were elected: chairman, Eugene H. Pool, New York; vice chairman, Harry P. Ritchie, St. Paul; secretary, Urban Maes, New Orleans; delegate, W. D. Haggard, Nashville, Tenn.; alternate, Carl B. Davis, Chicago; Executive Committee, George P. Muller, Philadelphia; Wallace I. Terry, San Francisco, and Eugene H. Pool, New York.

Dr. Robert C. Coffey, Portland, Ore., read a paper on "The Treatment of Cancer of the Rectum." Discussed by Drs. Daniel F. Jones, Boston; J. Tate Mason, Seattle; Carl B. Davis, Chicago; George W. Crile, Cleveland, and Robert C. Coffey, Portland, Ore.

Dr. Martin B. Tinker, Ithaca, New York, read a paper on "The Desperate Risk Goiter."

Dr. J. Earl Else, Portland, Ore., read a paper on "The Cause of Surgical Failure in Hyperthyroidism."

These two papers were discussed by Drs. George W. Crile, Cleveland; Walter M. Boothby, Rochester, Minn.; Frank H. Lahey, Boston; W. W. Grant, Denver; Willard Bartlett, St. Louis; John J. Gilbride, Philadelphia; Harry G. Sloan, Cleveland; W. D. Haggard, Nashville, Tenn.; John B. Haeberlin, Chicago; Charles H. Mayo, Rochester, Minn.; Martin B. Tinker, Ithaca, N. Y., and J. Earl Else, Portland, Ore.

Dr. A. W. Adson, Rochester, Minn., read a paper on "Results Following the Removal of Spinal Cord Tumors." Discussed by Drs. Charles H. Frazier, Philadelphia; Ernest Sachs, St. Louis, and A. W. Adson, Rochester, Minn.

Drs. Harry P. Ritchie, St. Paul, and John Staige Davis, Baltimore, presented a paper on "The Classification of Congenital Clefts of the Lip and Palate, with Suggestions for Recording These Cases." Discussed by Drs. James E. Thompson, Galveston, Texas; Vilray P. Blair, St. Louis; Truman W. Brophy, Chicago, and Harry P. Ritchie, St. Paul.

Dr. Moses Salzer, Cincinnati, read a paper on "Anesthesia; a Part-Time Specialty." Discussed by Drs. F. H. McMechan, Avon Lake, Ohio; Herbert A. Black, Pueblo, Colo., and Moses Salzer, Cincinnati.

FRIDAY, MAY 26—MORNING

A joint meeting was held with the Section on Gastro-Enterology and Proctology.

The meeting was called to order at 9 o'clock by the chairman of the Section on Surgery, General and Abdominal, Dr. Wallace I. Terry, San Francisco.

The following papers were read as a symposium on "Peptic Ulcer":

Dr. Arthur Dean Bevan, Chicago: "The Relative Value of Medical and Surgical Treatment of Gastric and Duodenal Ulcer and the Indication for Each."

Dr. Bertram W. Sippy, Chicago: "The Relative Value of Medical and Surgical Treatment in Gastric and Duodenal Ulcer."

Dr. Thomas R. Brown, Baltimore: "The Relative Rôles of Medical and Surgical Treatment in Gastric and Duodenal Ulcer."

These three papers were discussed by Drs. J. M. T. Finney, Baltimore; Franklin W. White, Boston; Walter C. Alvarez, San Francisco; Albert J. Ochsner, Chicago; Frank Smithies, Chicago; Robert C. Coffey, Portland, Ore.; Seale Harris, Birmingham, Ala.; J. Shelton Horsley, Richmond, Va.; Arthur Dean Bevan, Chicago; Bertram W. Sippy, Chicago; Charles H. Mayo, Rochester, Minn., and Thomas R. Brown, Baltimore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, MAY 24—AFTERNOON

The section was called to order at 2 o'clock by the chairman, Dr. Sidney A. Chalfant, Pittsburgh.

Dr. Chalfant read the chairman's address, entitled "Some Gynecologic Misdemeanors."

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

The chairman appointed Drs. Frederick J. Taussig, St. Louis, and T. J. Watkins, Chicago, to serve on the Executive Committee, Drs. Reuben Peterson, Ann Arbor, Mich., and John O. Polak, New York, being absent.

Dr. Roland S. Cron, Ann Arbor, Mich., read a paper on "Carbon Dioxid Gas Inflation as Means of Determining Sterility in Women." Discussed by Drs. George Gray Ward, Jr., New York, and Roland S. Cron, Ann Arbor, Mich.

Dr. Emil Novak, Baltimore, read a paper on "Hydatidiform Mole and Chorio-Epithelioma." Discussed by Drs. Frederick J. Taussig, St. Louis; Herbert A. Black, Pueblo, Colo.; Otto H. Schwarz, St. Louis; J. Earl Else, Portland, Ore.; T. J. Watkins, Chicago; Moses Childress, Oskaloosa, Iowa; John P. Gardiner, Toledo, Ohio; J. Craig Neel, San Francisco, and Emil Novak, Baltimore.

Drs. John G. Clark and Floyd E. Keene, Philadelphia, presented a paper on "Uterine Hemorrhage of Benign Origin Treated by Irradiation: An Analysis of Five Hundred and Twenty-Seven Cases of Myoma Uteri and Myopathic Lesions." Discussed by Drs. Henry Schmitz, Chicago; F. F. Lawrence, Columbus, Ohio, and John G. Clark, Philadelphia.

Dr. J. Craig Neel, San Francisco, read a paper on "The Treatment of Cystocele, with Report of Cases."

Dr. Alfred Baker Spalding, San Francisco, read a paper on "The Cause and Cure of High Rectocele."

Dr. George Gray Ward, Jr., New York, read a paper on "The Technic of the Repair of Enterocele (Posterior Vaginal Hernia) and Rectocele as an Entity and When Associated with Prolapse of the Uterus."

These three papers were discussed by Drs. C. H. Magee, Burlington, Iowa; Albert Goldspohn, Chicago; John F. Herrick, Ottumwa, Iowa; J. Craig Neel, San Francisco, and Alfred Baker Spalding, San Francisco.

Drs. L. R. Wharton and J. W. Pierson, Baltimore, presented a paper on "A Clinical and Roentgenologic Study of the Minor Forms of Embolism Following Abdominal Operations." Discussed by Drs. Emil Novak, Baltimore, and L. R. Wharton, Baltimore.

THURSDAY, MAY 25—AFTERNOON

The chairman appointed Dr. Rudolph W. Holmes, Chicago, to serve on the Executive Committee, Dr. T. J. Watkins, Chicago, having been called home.

Dr. G. K. Dickinson, Jersey City, N. J., read a paper on "Perforating Ulcers of the Cecum." Discussed by Dr. Charles H. Mayo, Rochester, Minn.

Dr. Harold W. Shutter, Milwaukee, read a paper on "Care of the Bladder During Pregnancy, Labor and the Puerperium." Discussed by Drs. Arthur H. Curtis, Chicago; John J. Gardiner, Toledo, Ohio, and Harold W. Shutter, Milwaukee.

Dr. Charles H. Mayo, Rochester, Minn., read a paper on "The Cause and Relief of Acute Intestinal Obstruction." Discussed by Drs. George W. Crile, Cleveland, and Charles H. Mayo, Rochester, Minn.

Dr. Joseph L. Baer, Chicago, read a paper on "A Contribution to the Problem of Nephritis and Nephrosis in Pregnancy." Discussed by Drs. A. B. Spalding, San Francisco; Carl H. Davis, Milwaukee; N. S. Heaney, Chicago, and Joseph L. Baer, Chicago.

Drs. J. B. DeLee and E. L. Cornell, Chicago, presented a paper on "Results of the Low Cervical Cesarean Section (Laparotracheotomy) in One Hundred and Twenty-Five Cases at the Chicago Lying-In Hospital."

Dr. E. L. King, New Orleans, read a paper on "The End-Results of Cesarean Section."

These two papers were discussed by Drs. Rudolph W. Holmes, Chicago; Charles E. Paddock, Chicago; George Gellhorn, St. Louis; David S. Hillis, Chicago; Benjamin H. Breakstone, Chicago; Bertha Van Hoosen, Chicago; Joseph L. Baer, Chicago; E. L. Cornell, Chicago, and E. L. King, New Orleans.

FRIDAY, MAY 26—AFTERNOON

The following officers were elected: chairman, Dr. E. P. Davis, Philadelphia; vice chairman, Dr. Harry S. Crossen, St. Louis; secretary, Dr. Carl H. Davis, Milwaukee; delegate, Dr. George Gray Ward, Jr., New York; alternate, Dr. Alfred Baker Spalding, San Francisco.

Dr. Leda J. Stacy, Rochester, Minn., read a paper on "Retroverted Uterus: Incidence and Symptoms."

Dr. Palmer Findley, Omaha, read a paper on "Frequency and Clinical Significance of Uterine Displacements."

Dr. Harry E. Mock, Chicago, read a paper on "So-Called Traumatic Uterine Displacements: Medicolegal Aspects of This Problem."

These three papers were discussed by Drs. George Gellhorn, St. Louis; P. B. Salatich, New Orleans; Frederick J. Taussig, St. Louis; Albert Goldspohn, Chicago; Hudson Talbott, St. Louis; Hugo Ehrenfest, St. Louis; Henry Schwarz, St. Louis; A. N. Creadick, New Haven, Conn.; Harry E. Mock, Chicago; Palmer Findley, Omaha, and Leda J. Stacy, Rochester, Minn.

Dr. Axel Werelius, Chicago, read a paper entitled "Is Death in Acute Intestinal Obstruction Due to a Hepatic Insufficiency?" Discussed by Drs. Barney Brooks, St. Louis; James J. Moorhead, Terre Haute, Ind., and Axel Werelius, Chicago.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Nelson Miles Black, Milwaukee.

Dr. Nelson Miles Black, Milwaukee, read the chairman's address.

Dr. S. Lewis Ziegler, Philadelphia, read a paper on "A Further Note on Rapid Dilatation in the Radical Treatment of Lacrimonasal Disease." Discussed by Drs. Arthur J. Bedell, Albany, N. Y.; John A. Donovan, Butte, Mont.; George F. Keiper, Lafayette, Ind.; William Zentmayer, Philadelphia; E. C. Ellett, Memphis, Tenn.; W. R. Thompson, Fort Worth, Texas; Allen Greenwood, Boston; John Green, Jr., St. Louis; J. W. Charles, St. Louis, and S. Lewis Ziegler, Philadelphia.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. William L. Benedict, Rochester, Minn., read a paper on "The Retinitis of Hypertension Plus Nephritis."

Dr. Joseph L. Behan, Brooklyn, read a paper on "The Fundus Changes in Nephritis."

Dr. Martin Cohen, New York, read a paper on "The Significance of Pathologic Changes in the Fundus in General Arterial and Kidney Diseases."

These three papers were discussed by Drs. George Slocum, Ann Arbor, Mich.; Albert E. Bulson, Jr., Fort Wayne, Ind.; Allen Greenwood, Boston; J. W. Charles, St. Louis; W. H. Wilder, Chicago; S. Lewis Ziegler, Philadelphia; E. V. L. Brown, Chicago; William L. Benedict, Rochester, Minn.; Joseph L. Behan, Brooklyn, and Martin Cohen, New York.

Dr. William C. Finnoff, Denver, read a paper on "A Method of Examining Cases of Recurrent Hemorrhages into the Retina and Vitreous of Young Persons." Discussed by Drs. William Zentmayer, Philadelphia; Albert E. Bulson, Jr., Fort Wayne, Ind.; Edward Jackson, Denver; George S. Derby, Boston, and William C. Finnoff, Denver.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. V. E. Van Kirk, Pittsburgh, read a paper on "Industrial Ophthalmology: A Survey of Twenty-Five Thousand Cases." Discussed by Drs. George H. Cross, Chester, Pa.; Albert C. Snell, Rochester, N. Y.; John A. Donovan, Butte, Mont.; Gilbert E. Seaman, Milwaukee; Albert E. Bulson, Jr., Fort Wayne, Ind.; Frederick T. Hyde, Port Angeles, Wash.; Lewis H. Taylor, Wilkes-Barre, Pa.; Frank S. Auten, Belleville, Ill.; J. W. Charles, St. Louis; George F. Keiper, Lafayette, Ind.; Rufus Jackson, Baton Rouge, La., and V. E. Van Kirk, Pittsburgh.

Major Edmund B. Spaeth, Washington, D. C., read a paper on "A Series of Ophthalmologic Cases Illustrating Various Methods in Plastic Surgery for Correction of Deformities Due to Injury with a Resulting Loss of Tissue." Discussed by Dr. V. P. Blair, St. Louis, and Major Edmund B. Spaeth, Washington, D. C.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9 o'clock by the chairman.

Dr. William P. Reaves, Greensboro, N. C., exhibited a visual acuity and astigmatic cabinet.

Dr. A. E. Ewing, St. Louis, demonstrated the preservation of gross eye specimens.

Dr. Lucien Howe, Buffalo, read a paper on "The Coefficient of Thermal Conductivity of the Eye and Orbit, Measured with Warm Applications." Discussed by Drs. William E. Shahan, St. Louis; Arthur E. Prince, Springfield, Ill., and Lucien Howe, Buffalo.

Drs. James Moores Ball and Thomas Noxon Tooney, St. Louis, presented a paper on "Vaccinia of the Eyelids by Homo-Inoculation." Discussed by Dr. George W. Jean, Santa Barbara, Calif.

Dr. Edward Jackson, Denver, read a paper on "Examination of the Eye by Direct Sunlight." Discussed by Drs. George F. Keiper, Lafayette, Ind.; Marcus Feingold, New

Orleans; William C. Finnoff, Denver, and Edward Jackson, Denver.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper on "The Iris in Health and Disease as Seen with the Slit Lamp." Discussed by Drs. Harry S. Gradle, Chicago; Marcus Feingold, New Orleans; Martin Cohen, New York, and Arthur J. Bedell, Albany, N. Y.

Dr. Joseph P. Israel, Houston, Texas, read a paper on "Some Ophthalmologic Manifestations of Diseases of the Nervous System." Discussed by Dr. J. M. Banister, Omaha.

Dr. John O. McReynolds, Dallas, Texas, read a paper on "Intracapsular Operations for Cataract in North America."

Dr. A. E. Ewing, St. Louis, read a paper on "Zonule Protection in Cataract Extraction."

These two papers were discussed by Drs. Allen Greenwood, Boston; G. C. Savage, Nashville, Tenn.; Arthur E. Prince, Springfield, Ill.; L. D. Green, San Francisco; George S. Derby, Boston; Frank S. Auten, Belleville, Ill.; John H. Burleson, San Antonio, Texas; Joseph S. Lichtenburg, Kansas City, Mo.; M. Hayward Post, St. Louis, and John O. McReynolds, Dallas, Texas.

Dr. H. D. Lamb, St. Louis, read a paper on "Blindness in Missouri as Revealed by Examinations Under the State Blind Pension Law of 1921." Discussed by Drs. John Green, Jr., St. Louis; E. C. Ellett, Memphis, Tenn.; Harold Bailey, Springfield, Mo.; Nelson Miles Black, Milwaukee, and H. D. Lamb, St. Louis.

FRIDAY, MAY 26—MORNING

The meeting was called to order at 9 o'clock by the chairman.

Dr. Lucien Howe, Buffalo, presented the report of the Committee on the Study of Ocular Blindness, and asked that the committee be continued.

Dr. Arthur J. Bedell, Albany, N. Y., moved that the report be accepted and that the committee be continued. Seconded and carried.

Dr. Lucien Howe, Buffalo, presented the report of the Committee on the Prevention of Blindness, and asked that the committee be continued.

Dr. Marcus Feingold, New Orleans, moved that the report be accepted and that the committee be continued. Seconded and carried.

The report of the Committee on Local Anesthesia, Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., chairman, was read by the secretary.

Dr. C. D. Wescott, Chicago, moved that the report be accepted and that the committee be continued. Seconded and carried.

The report of the Committee Appointed to Cooperate in Arranging and Organizing an International Congress of Ophthalmology was presented by Dr. Edward Jackson, Denver.

Dr. Arthur J. Bedell, Albany, N. Y., moved that the report be accepted and that the committee be thanked for its work and discharged. Seconded and carried.

Dr. W. H. Wilmer, Washington, D. C., presented the report of the Committee on Award of the Knapp Medal, recommending for this medal the paper of Dr. F. H. Verhoeff, Boston, on "Glioma of the Optic Nerve."

Dr. Harry S. Gradle, Chicago, presented the majority report of the Committee on Estimating Compensation for Eye Injuries.

Dr. Albert S. Snell, Rochester, N. Y., presented the minority report.

Dr. G. C. Savage, Nashville, Tenn., moved that the committee be continued. Seconded.

Dr. C. D. Wescott, Chicago, moved, as an amendment to Dr. Savage's motion, that the committee be continued and that two more members be added. Amendment accepted. This motion was discussed by Drs. George F. Keiper, Lafayette, Ind.; James M. Patton, Omaha; V. E. Van Kirk, Pittsburgh; John A. Donovan, Butte, Mont.; John O. McReynolds, Dallas, Texas; Harry S. Gradle, Chicago, and Albert C. Snell, Rochester, N. Y.

Vote on the amended motion lost.

Dr. John A. Donovan, Butte, Mont., moved that the majority report be approved and that the committee be continued. Seconded and carried.

Dr. Lucien Howe, Buffalo, moved that the Committee on the International Year Book be continued and permission be given to make its report later. Seconded and carried.

Dr. Lucien Howe, Buffalo, then presented the following resolution:

WHEREAS, The avowed object of the Knapp Memorial Fund is to encourage and aid scientific work and advancement in the field of ophthalmology; and

WHEREAS, The awarding of a prize medal, no matter how modest in itself, serves to stimulate ambition and encourage scientific work often more than financial assistance; and

WHEREAS, The invested amount of this Knapp fund now apparently exceeds $3,500 and is gradually increasing; therefore, be it

Resolved, That the committee in charge of that fund be hereby requested to expend half of the annual interest for the purchase of a suitable simple medal to be awarded annually, unless in certain years there be some special reason to the contrary; and

Resolved, That in making that award the scientific work already accomplished by a member shall be rated at 50 per cent., and the excellence of a paper presented at the previous meeting shall be rated also at 50 per cent. of the measure by which the committee shall decide to whom that medal is given.

Dr. Lucien Howe, Buffalo, moved the adoption of this resolution. Motion seconded by Dr. George S. Derby, Boston, who offered an amendment to the effect that this matter be referred to the Executive Committee for their action and report next year. Amended motion seconded by Dr. C. D. Wescott, Chicago. Dr. Howe did not accept the amendment, but the amended motion carried.

The following officers were elected: chairman, John O. McReynolds, Dallas, Texas; vice chairman, John Green, Jr., St. Louis; secretary, George S. Derby, Boston; delegate, Cassius D. Wescott, Chicago; alternate, Harry S. Gradle, Chicago; member of the Board of Ophthalmic Examinations, Walter R. Parker, Detroit.

Dr. James Patton, Omaha, read a paper on "The Localization and Extraction of Intra-Ocular Foreign Bodies." Discussed by Drs. George S. Derby, Boston; George F. Keiper, Lafayette, Ind.; J. M. Banister, Omaha; A. E. Ewing, St. Louis; John A. Donovan, Butte, Mont.; J. G. Dorsey, Wichita, Kan.; Oliver Tydings, Chicago, and James Patton, Omaha.

Drs. Walter Scott Franklin and Frederick C. Corder, San Francisco, presented a paper on "An Unusual Orbital Tumor." No discussion.

Drs. H. W. Luedde and J. F. Hardesty, St. Louis, presented a paper on "Central Retinitis with Recovery of Normal Vision." Discussed by Drs. Greenfield Sluder, St. Louis; J. W. Charles, St. Louis; A. E. Ewing, St. Louis; Edward C. Spitze, East St. Louis; Joseph S. Lichtenburg, Kansas City, Mo.; C. D. Wescott, Chicago; J. M. Banister, Omaha; Oliver Tydings, Chicago; Abraham Levinson, Chicago, and W. H. Luedde, St. Louis.

Dr. Cecil M. Jack, Decatur, Ill., read a paper on "Focal Infection in the Tonsil Causing a Tuberculous Opththalmia." Discussed by Drs. Oliver Tydings, Chicago, and William C. Finnoff, Denver.

Dr. H. H. Briggs, Asheville, N. C., read a paper on "The Importance of Heterophoria Tests in Routine Refraction." Discussed by Drs. G. C. Savage, Nashville, Tenn.; John Green, Jr., St. Louis, and H. H. Briggs, Asheville, N. C.

Dr. Avery D. Prangen, Rochester, Minn., read a paper on "Spasm of Accommodation, with Report of Thirty Cases." Discussed by Drs. Charles A. Bahn, New Orleans; William L. Benedict, Rochester, Minn., and Avery D. Prangen, Rochester, Minn.

Dr. Joseph D. Heitger, Louisville, Ky., read a paper on "The Advantages of the Use of Minus Cylinders in Routine Refractions." Discussed by Drs. John Green, Jr., St. Louis, and Joseph Heitger, Louisville, Ky.

Dr. Oscar Wilkinson, Washington, D. C., read a paper on "Present Day Status of Squint Surgery—a New Operative Technic." Discussed by Drs. G. C. Savage, Nashville, Tenn.; J. M. Banister, Omaha; H. H. Briggs, Asheville, N. C.; John Green, Jr., St. Louis; Meyer Wiener, St. Louis; Eldred B. Cayce, Nashville, Tenn., and Oscar Wilkinson, Washington, D. C.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. J. A. Stucky, Lexington, Ky.

Dr. J. A. Stucky, Lexington, Ky., read the chairman's address.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion was adopted.

The chairman appointed Dr. Burt R. Shurly to take the place of Dr. Emil Mayer as delegate from the section and also on the executive committee in place of Dr. Ross H. Skillern.

Dr. John J. Shea, Memphis, Tenn., read a paper on "A Comparative Study of the Ethmoidal and Sphenoidal Operations." Discussed by Drs. Frank L. Dennis, Colorado Springs, Colo.; T. E. Carmody, Denver; John A. Cavanaugh, Chicago; Edwin McGinnis, Chicago; Fred J. Pratt, Minneapolis, and John J. Shea, Memphis, Tenn.

Dr. Gordon B. New, Rochester, Minn., read a paper on "The Nasopharyngeal Syndrome." Discussed by Drs. H. W. F. Waltman, Rochester, Minn.; Joseph C. Beck, Chicago, and Gordon B. New, Rochester, Minn.

Dr. Lafayette Page, Indianapolis, read a paper on "Observations on the Effects of Intratracheal Medication on Gas Burns of the Respiratory Tract." Discussed by Drs. Norval H. Pierce, Chicago; Burt R. Shurly, Detroit; Wendell C. Phillips, New York, and Lafayette Page, Indianapolis.

Dr. George E. Shambaugh, Chicago, read a paper on "An Experiment in Graduate Training in Otolaryngology." Discussed by Drs. Joseph C. Beck, Chicago; Charles G. Stivers, Los Angeles; Wendell C. Phillips, New York; Charles W. Richardson, Washington, D. C.; M. A. Goldstein, St. Louis; Norval H. Pierce, Chicago; Jacques Holinger, Chicago; William B. Chamberlain, Cleveland; Gilbert E. Seaman, Milwaukee, and George E. Shambaugh, Chicago.

Dr. Albert H. Miller, Providence, R. I., read a paper on "Pharyngeal Insufflation Anesthesia." Discussed by Drs. Joseph C. Beck, Chicago; Edwin McGinnis, Chicago, and Albert H. Miller, Providence, R. I.

Dr. W. Perry Reaves, Greensboro, N. C., read a paper on "Condensed and Accurate Charting of Examination and Diagnosis of Ear, Nose, Throat and Teeth." Discussed by Drs. Joseph D. Heitger, Louisville, Ky.; George F. Keiper, Lafayette, Ind., and W. Perry Reaves, Greensboro, N. C.

Thursday, May 25—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

Dr. George E. Davis, New York, read a paper on "The Future of the Blood Clot Dressing in Mastoid Surgery." Discussed by Drs. J. A. Stucky, Lexington, Ky.; Harold M. Hays, New York; George E. Shambaugh, Chicago, and George E. Davis, New York.

Dr. Frank L. Dennis, Colorado Springs, Colo., read a paper on "The Practical Diagnostic Value of Tests of the Vestibular Mechanism." Discussed by Drs. Harold M. Hays, New York; H. W. Lyman, St. Louis; H. I. Lillie, Rochester, Minn.; Norval H. Pierce, Chicago; Chester C. Cott, Buffalo; George E. Shambaugh, Chicago; M. A. Goldstein, St. Louis, and Frank L. Dennis, Colorado Springs, Colo.

Dr. Harold Fletcher, San Francisco, read a paper on "Determination of Disability as to Loss of Hearing and the Importance of Vertigo in Industrial Accident Cases." Discussed by Drs. Charles G. Stivers, Los Angeles; John A. Donovan, Butte, Mont.; George E. Shambaugh, Chicago; J. W. Charles, St. Louis; William House, Portland, Ore.; M. A. Goldstein, St. Louis, and Harold Fletcher, San Francisco.

Dr. H. I. Lillie, Rochester, Minn., read a paper on "Otalgia and Mastoidalgia Not Indications for the Mastoid Operation." Discussed by Drs. Greenfield Sluder, St. Louis; Norval H. Pierce Chicago; Harry L. Pollock, Chicago; Louis K. Guggenheim, St. Louis; J. W. Charles, St. Louis; Ivor G. Clark, Columbus, Ohio; Harry H. Meyer, St. Louis; Jacques Holinger, Chicago, and H. I. Lillie, Rochester, Minn.

Dr. J. W. Jervey, Greenville, S. C., read a paper on "Mastoiditis Hyperplastica Serosa." Discussed by Drs. J. A. Stucky, Lexington, Ky.; Arnold B. Kauffman, Chicago; Norval H. Pierce, Chicago; George E. Shambaugh, Chicago; Louis K. Guggenheim, St. Louis, and J. W. Jervey, Greenville, S. C.

Dr. C. F. Yerger, Chicago, read a paper on "Meningitis of Otitic Origin: A Statistical Study Based on Sixty-Three Cases Observed at Cook County Hospital During the Decade from 1911 to 1920, Inclusive." Discussed by Drs. Norval H. Pierce, Chicago; Jacques Holinger, Chicago; Louis K. Guggenheim, St. Louis, and C. F. Yerger, Chicago.

Friday, May 26—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. William B. Chamberlain, Cleveland; vice chairman, Dr. J. W. Jervey, Greenville, S. C.; secretary, Dr. Samuel Iglauer, Cincinnati; delegate, Dr. Burt R. Shurly, Detroit; alternate, Dr. Hill Hastings, Los Angeles.

Drs. Fred Wade Jones and H. E. Middleton, Alton, Ill., presented an ether apparatus.

The report of the Committee on the Education of the Deaf Child was read by Dr. M. A. Goldstein, St. Louis. It was moved by Dr. William E. Sauer, St. Louis, that this report be accepted. Seconded and carried.

The report of the Committee on Postgraduate Teaching was read by the secretary. It was moved by Dr. M. A. Goldstein, St. Louis, that the report be accepted and the committee discharged. Seconded and carried.

The report of the Committee on Necrology was read by the secretary. It was moved by Dr. M. A. Goldstein, St. Louis, that this report be accepted by rising vote. Carried.

The report of the Committee on the Use of Caustic Alkalis was read by Dr. Chevalier Jackson, Philadelphia. It was moved by Dr. William B. Chamberlain, Cleveland, that the report be accepted and the committee continued. Seconded and carried.

Dr. William B. Chamberlain, Cleveland, read a communication from the Committee of Organization of the Tenth International Congress of Otology, to be held in Paris, July 19-22, 1922.

Dr. Chevalier Jackson, Philadelphia, read a paper on "Bronchoscopic Observations on the Cough Reflex in Health and Disease." Discussed by Dr. Samuel Iglauer, Cincinnati.

Dr. Elmer L. Kenyon, Chicago, read a paper on "The Significance of the Extrinsic Musculature of the Larynx and Its Relationship to Certain Disorders of Voice." Discussed by Drs. Charles G. Stivers, Los Angeles; Louis K. Guggenheim, St. Louis; Jacques Holinger, Chicago; Dennis J. McDonald, New York, and Elmer L. Kenyon, Chicago.

The chairman presented Dr. George E. de Schweinitz, the President of the American Medical Association.

Dr. Charles G. Stivers, Los Angeles, read a paper on "The Need of Standards of Training for Specialists, General Practitioners and Teachers of Speech Correction." Discussed by Drs. M. A. Goldstein, St. Louis; Elmer L. Kenyon, Chicago; Dennis J. McDonald, New York; Louis K. Guggenheim, St. Louis; J. A. Stucky, Lexington, Ky., and Charles G. Stivers, Los Angeles.

Dr. Sidney Israel, Houston, Texas, read a paper on "The Correction of External Deformities of the Nose Through the Intranasal Approach." Discussed by Drs. W. T. Coughlin, St. Louis; Harry L. Pollock, Chicago; William M. C. Bryan, St. Louis; M. A. Goldstein, St. Louis; William B. Chamberlain, Cleveland; Samuel Iglauer, Cincinnati; J. M. Banister, Omaha; Roy P. Scholz, St. Louis; Louis K. Guggenheim, St. Louis, and Sidney Israel, Houston, Texas.

SECTION ON DISEASES OF CHILDREN

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Emanuel C. Fleischner, San Francisco.

Drs. Charles Gilmore Kerley and Edward J. Lorenze, Jr., New York, presented a paper on "Hyperacidity of the Stomach Contents in Children." Discussed by Drs. John Zahorsky, St. Louis; Thomas C. McCleave, Oakland, Calif.; Mary Freeman, Perrine, Fla.; Harry Lowenburg, Philadelphia; Frank B. Hollenbeck, Lincoln, Neb., and Charles Gilmore Kerley, New York.

Dr. Abram Zingher, New York, read a paper on "Immunity Results Obtained with Mixtures of Diphtheria Toxin-Antitoxin in the Public Schools of New York City (Manhattan and the Bronx) and in Various Institutions." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; Charles Gilmore Kerley, New York; C. A. Earle, DesPlaines, Ill.; William A. Mulherin, Augusta, Ga.; Ernest R. Brooks, Cleveland, and Abraham Zingher, New York.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. William R. P. Emerson, Boston, read a paper on "Physical Unfitness in Children." Discussed by Drs. W. H. O. Hoffmann, Chicago; Albert D. Kaiser, Rochester, N. Y.; William H. Donnelly, Brooklyn; Alfred L. Kastner, Milwaukee; George E. Baxter, Chicago, and William R. P. Emerson, Boston.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Albert D. Kaiser, Rochester, N. Y., read a paper on "Effects of Tonsillectomy on General Health in Five Thousand Children." Discussed by Drs. Julius H. Hess, Chicago; William R. P. Emerson, Boston; Harry Lowenburg, Philadelphia; John Zahorsky, St. Louis, and Albert D. Kaiser, Rochester, N. Y.

Dr. H. Leonard Bolen, Chicago, read a paper on "Diabetes Mellitus in Children Following Infection." Discussed by Drs. Charles Gilmore Kerley, New York; Isaac A. Abt, Chicago, and H. Leonard Bolen, Chicago.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9:15 by the vice chairman, Dr. William A. Mulherin, Augusta, Ga.

Dr. Emanuel C. Fleischner, San Francisco, read the chairman's address. No discussion.

Dr. Henry Dietrich, Los Angeles, read a paper on "An Analysis of Private Case Records with Reference to Certain Phases of Breast Feeding." Discussed by Drs. I. A. Abt, Chicago; William A. Mulherin, Augusta, Ga.; Thomas C. McCleave, Oakland, Calif.; M. L. Turner, Des Moines, Iowa; L. R. DeBuys, New Orleans; Ada E. Schweitzer, Indianapolis; G. A. Warren, Black Rock, Ark.; Edgar A. Hines, Seneca, S. C.; F. X. Mulherin, Augusta, Ga.; Clifford G. Grulee, Chicago; George E. Baxter, Chicago, and Henry Dietrich, Los Angeles.

Drs. F. L. Adair and C. A. Stewart, Minneapolis, presented a paper on "A Study of Milk Ingestion in Relation to Changes in the Body Weight of New-Born Infants." Discussed by Drs. M. L. Turner, Des Moines, Iowa; Isaac A. Abt., Chicago, and C. A. Stewart, Minneapolis.

Drs. Louis W. Sauer, L. D. Minsk and W. G. Alexander, Evanston, Ill., presented a paper on "Gastric Findings in Children with Anorexia." Discussed by Drs. W. McKim Marriott, St. Louis; Leon T. LeWald, New York; John A. Foote, Washington, D. C.; Park, J. White, St. Louis; Alfred L. Kastner, Milwaukee, and Louis W. Sauer, Evanston, Ill.

Dr. Harry Lowenburg, Philadelphia, read a paper on "A Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding: Report of Cases." Discussed by Drs. Isaac A. Abt, Chicago; John A. Foote, Washington, D. C., and Harry Lowenburg, Philadelphia.

Drs. L. R. DeBuys and Maud Loeber, New Orleans, and Thomas H. Haines, Columbus, Ohio, presented a paper on "A Study in an Asylum on the Physical and Mental Status of Its Inmates." Discussed by Drs. O. W. Rowe, Duluth, Minn.; John A. Foote, Washington, D. C.; John W. Hill, Knoxville, Tenn., and L. R. DeBuys, New Orleans.

FRIDAY, MAY 26—MORNING

The meeting was called to order at 9:10 by the chairman. The following officers were elected: chairman, Dr. Borden S. Veeder, St. Louis; vice chairman, Dr. John A. Foote, Washington, D. C.; secretary, Dr. Edgar J. Huenekens, Minneapolis; delegate, Dr. Isaac A. Abt, Chicago; alternate, Dr. William A. Mulherin, Augusta, Ga.

Dr. L. R. DeBuys, New Orleans, submitted the report of the Committee on Promotion of Section Activities:

To the Section on Diseases of Children of the American Medical Association:

Your committee appointed at the last meeting of the Section on Diseases of Children of the American Medical Association held in Boston, June 6-10, 1921, for the purpose of acting on certain suggestions made by Dr. Frank C. Neff in his chairman's address, begs to make the following report:

The committee met in Cleveland, Nov. 8, 1921. The committee decided to ascertain what the attitude of the American Medical Association would be toward the contemplated organization within the Section on Diseases of Children of the American Medical Association and made the following recommendations:

ORGANIZATION

(a) The committee believes that there should be within the section certain members specified as supporting members, and that any Fellow of the American Medical Association who shall designate his willingness to become a supporting member may do so.

(b) That the contribution of the supporting members shall be voluntary, and shall be not less than five dollars ($5) per annum.

(c) That the supporting members shall receive the transactions of the section without extra cost.

(d) That a list of the Fellows of the Association who have registered at the annual session and those who have registered at the five preceding annual sessions shall appear in the transactions of the section, and the supporting members of the section shall have opposite their names an asterisk. Subscribers to the transactions shall have opposite their names a double asterisk.

FINANCES

That a fund shall be created:

(a) To cover the cost of the transactions to be sent each member.

(b) For the development of the work of the section:

1. By defraying additional expenses of the secretary's office.
2. By stimulating scientific exhibits within the scientific assembly.
3. By defraying expenses of invited guests; and
4. To form a grant to stimulate scientific investigation in pediatrics.

(c) The fund contributed by the supporting members shall be known as the "Abraham Jacobi Fund," in honor of the memory of the late Abraham Jacobi, in recognition of his distinguished service to American pediatrics.

(d) Control of the fund shall be placed in the hands of a committee of five, one member to be appointed for a term of five years by the executive committee at each annual meeting. The first committee shall be appointed by the executive committee as follows: one member for a period of five years; one member for a period of four years; one member for a period of three years; one member for a period of two years, and one member for a period of one year. No member of the committee shall immediately succeed himself.

(e) There shall be an annual report of this committee which shall be included in the regular order of business of the section. The financial statement of the "Fund Committee" shall be audited annually by the executive committee of the section before the report is presented. The custodian of the finances of this fund shall be required to furnish a bond in the amount deemed sufficient by the "Fund Committee."

Respectfully submitted.

BORDEN S. VEEDER,
J. P. SEDGWICK,
L. R. DEBUYS, Chairman.

Dr. William Weston, Columbia, S. C., moved that the report be adopted. Motion seconded by Dr. W. A. Mulherin, Augusta, Ga. Carried unanimously.

Dr. H. F. Helmholz, Rochester, Minn., submitted a resolution that the section declare its approval of the principles encouraging public education in the hygiene of maternity and infancy embodied in the Sheppard-Towner Act.

(Not transmitted to the House of Delegates.)

Dr. H. F. Helmholz, Rochester, Minn., moved the adoption of this resolution. Seconded; carried unanimously.

Dr. John A. Foote, Washington, moved an expression of thanks to the Fellows residing in St. Louis for their many courtesies and of appreciation of their attendance and deliberations at the section meeting.

Dr. L. R. DeBuys, New Orleans, moved amendment to the motion, suggesting that it be made by a rising vote.

Amended motion seconded; carried (all members present standing).

Drs. W. A. Mulherin and F. X. Mulherin, Augusta, Ga., presented a paper on "A Few Observations on Malaria in Infancy." Discussed by Drs. William Weston, Columbia, S. C.; James D. Love, Jacksonville, Fla.; John Zahorsky, St.

Louis; Franklin P. Gengenbach, Denver; Arthur G. Jacobs, Memphis, Tenn.; Robert A. Strong, Pass Christian, Miss.; M. L. Turner, Des Moines, and William A. Mulherin, Augusta, Ga.

Dr. C. Ulysses Moore, Portland, Ore., read a paper on "Experimental Studies of the A Vitamin: Clinical and Anatomic Effects in Puppies and Rats." No Discussion.

Dr. A. Spencer Kaufman, Philadelphia, read a paper on "Consideration of Acute Aural Disease in Children." Discussed by Drs. Walter E. Simmonds, Chicago; John W. Hill, Knoxville, Tenn.; Henry Dietrich, Los Angeles; Clifford D. Sweet, Oakland, Calif.; W. McKim Marriott, St. Louis; S. Herman Lippitt, Milwaukee, and A. Spencer Kaufman, Philadelphia.

Dr. H. F. Helmholz, Rochester, Minn., read a paper on "Drug Therapy in Pyelitis."

Dr. Herman L. Kretschmer, Chicago, read a paper on "Urologic Problems in Pedriatrics."

These two papers were discussed by Drs. Clifford G. Grulee, Chicago; Charles Schott, Chicago; W. McKim Marriott, St. Louis; F. C. Rodda, Minneapolis; Louis C. Schroeder, New York; Frank C. Neff, Kansas City, Mo.; James A. Gardner, Buffalo; Harry Lowenburg, Philadelphia; William D. Davis, Denver; H. F. Helmholz, Rochester, Minn., and Herman L. Kretschmer, Chicago.

The chairman introduced the newly elected chairman, Dr. Borden S. Veeder, St. Louis.

Dr. Veeder said: "I thank you very much for the honor conferred on me in being elected chairman of this section. I will only say that next year we hope to build up the section in the way that it has been built up in the past few years and that we will all have a rousing meeting and you will all meet together next year in San Francisco." (Applause.)

Dr. Louis C. Schroeder, New York, read a paper on "Observations on the Etiology and Pathology of Chorea in Childhood." Discussed by Drs. Henry F. Helmholz, Rochester, Minn.; V. S. Cheney, Chicago; Walter E. Simmonds, Chicago, and Louis C. Schroeder, New York.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, MAY 24—MORNING

The section was called to order at 9:15 by the chairman, Dr. Carl Voegtlin, Washington, D. C.

The chairman appointed Dr. Cary Eggleston, New York City, to serve on the Executive Committee, Dr. George W. McCoy, Washington, D. C., being absent.

Dr. Voegtlin read the chairman's address, entitled "The Limitations of Intravenous Medication."

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Alvan L. Barach, New York City, read a paper on "The Therapeutic Use of Oxygen." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; C. W. Greene, Columbia, Mo.; R. H. Shippey, Wichita, Kan.; A. J. Carlson, Chicago; H. E. B. Pardee, New York City; M. A. Mortensen, Battle Creek, Mich., and Alvan L. Barach, New York City.

Dr. Nellis B. Foster, New York City read a paper on "The Treatment of Hypertension." Discussed by Drs. Leonard G. Rowntree, Rochester, Minn.; Lester J. Palmer, Seattle; W. W. Tomkins, Charleston, W. Va.; George E. McKean, Detroit, and Nellis B. Foster, New York City.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. F. M. Pottenger, Monrovia, Calif., read a paper on "The Present Status of the Treatment of Tuberculosis." Discussed by Drs. Louis C. Boisliniere, St. Louis; William C. Voorsanger, San Francisco; J. J. Singer, St. Louis; Edward F. Wells, Chicago, and F. M. Pottenger, Monrovia, Calif.

Dr. Russell M. Wilder, Rochester, Minn., read a paper on "Optimal Food Mixtures for Diabetic Patients." Discussed by Drs. L. H. Newburgh, Ann Arbor, Mich.; Nelson W. Janney, Los Angeles; W. H. Olmsted, St. Louis, and Russell M. Wilder, Rochester, Minn.

THURSDAY, MAY 25—MORNING

The following officers were elected: chairman, Dr. Cary Eggleston, New York City; vice chairman, Dr. Paul J. Hanzlik, San Francisco; secretary, Dr. Paul D. White, Boston; delegate, Dr. Leonard G. Rowntree, Rochester, Minn.; alternate, Dr. Carl Voegtlin; executive committee, Drs. Leonard G. Rowntree, Rochester, Minn.; Carl Voegtlin, Washington, D. C., and Cary Eggleston, New York.

Dr. John W. Churchman, New York, read a paper on "The Therapeutic Use of Drugs." Discussed by Drs. Carl Voegtlin, Washington, D. C.; Ralph H. Major, Kansas City, Mo., and John W. Churchman, New York.

Dr. E. Lawrence Oliver, Boston, read a paper on "Quartz Light Therapy in Skin Diseases." Discussed by Drs. Carl Voegtlin, Washington, D. C.; Howard Fox, New York; Samuel Ayres, Jr., Los Angeles; G. P. Lingenfelter, Denver; Jeffrey C. Michael, Houston, Texas; W. W. Tomkins, Charleston, W. Va., and E. Lawrence Oliver, Boston.

Dr. E. D. Osborne, Rochester, Minn., read a paper on "Contributions to the Pharmacology and Therapeutics of Iodids." Discussed by Drs. G. P. Grabfield, Boston, and E. D. Osborne, Rochester, Minn.

Dr. Paul D. White, Boston, read a paper on "The Present Status of the Use of Drugs in Heart Disease, with Especial Reference to Digitalis and Quinidin." Discussed by Drs. John Wyckoff, New York; Fred Smith, Chicago; Walter J. Wilson, Detroit; Louis F. Bishop, New York; Arthur E. Strauss, St. Louis; Lee Rice, Galveston, Texas; George B. Crow, Burlington, Iowa, and Paul D. White, Boston.

Dr. Samuel Stern, New York, read a paper on "The Present Status of Radiotherapy, with Particular Reference to Intensive Roentgen-Ray Treatment." No discussion.

Dr. Harold Thomas Hyman read a paper by Drs. Charles C. Lieb, Harold Thomas Hyman and Leo Kessel, New York, on "A Study of Graves' Syndrome and the Involuntary Nervous System." Discussed by Drs. A. J. Carlson, Chicago, and Harold Thomas Hyman, New York.

Dr. H. F. Helmholz, Rochester, Minn., reported for the committee appointed to investigate dosage of drugs in treatment of children. A motion that this committee be continued was seconded and unanimously carried.

FRIDAY, MAY 26—AFTERNOON

A joint meeting was held with the Sections on Practice of Medicine, and on Pathology and Physiology. For a report of the proceedings, see the minutes of the Section on Practice of Medicine.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, MAY 24—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. John A. Kolmer, Philadelphia.

Drs. Frank M. Huntoon, Swarthmore, Pa., and C. C. Bass, New Orleans, were appointed to serve on the Executive Committee.

Dr. John A. Kolmer, Philadelphia, read the chairman's address, entitled, "State Licensure Applied to Technicians."

Dr. Josiah J. Moore, Chicago, read a paper on "Standardization of Clinical Laboratories."

These two papers were discussed by Drs. Fred I. Lackenbach, San Francisco; Philip Hillkowitz, Denver; C. C. Bass, New Orleans; Frank M. Huntoon, Swarthmore, Pa.; Ward Burdick, Denver; Herman Spitz, Nashville, Tenn.; A. J. Carlson, Chicago; J. H. Black, Dallas, Texas, and Josiah J. Moore, Chicago.

Dr. J. H. Black, Dallas, Texas, made a motion that a committee of three be appointed by the chairman to go over Dr. Moore's paper as to the feasibility of the plan for the standardization of laboratories and to bring in a report. Seconded and carried.

Drs. C. C. Bass, New Orleans; Kenneth Lynch, Dallas, Texas, and Philip Hillkowitz, Denver, were appointed and instructed to report Thursday afternoon.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Francis Lowell Burnett, Boston, read a paper on "Intestinal Rate and the Form of the Feces." No discussion.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. William Carpenter MacCarty, Rochester, Minn., read a paper on "Does Cancer Arise in Gastric Ulcer?" Discussed by Drs. Herbert R. Brown, Rochester, N. Y.; John J. Gilbride, Philadelphia; J. Shelton Horsley, Richmond, Va.; Philip Hillkowitz, Denver; William H. Stewart, New York; D. J. Davis, Chicago; Eugene L. Opie, St. Louis, and William Carpenter MacCarty, Rochester, Minn.

Dr. Lester Dragstedt, Chicago, read a paper on "Acute Dilatation of Stomach." Discussed by Drs. James J. Moorhead, Terre Haute, Ind.; John J. Gilbride, Philadelphia; A. J. Carlson, Chicago, and Lester Dragstedt, Chicago.

Dr. Harry J. Corper, Denver, read a paper on "Pulmonary Aspiration of Particulate Matter Normally and During Anesthesia." No discussion.

Drs. G. A. Friedman and Julius Gottesman, New York, presented a paper on "A Study on the Relation of the Thyroid to the Pancreatic Diabetes in Dogs." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; Charles W. Greene, Columbia, Mo.; Arno B. Luckhardt, Chicago; A. J. Carlson, Chicago, and G. A. Friedman, New York.

THURSDAY, MAY 25—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. Arno B. Luckhardt, Chicago; vice chairman, Dr. Kenneth M. Lynch, Dallas, Texas; secretary, Josiah J. Moore, Chicago; delegate, Dr. D. J. Davis, Chicago; alternate, Dr. John A. Kolmer, Philadelphia.

Dr. Frank M. Huntoon, Swarthmore, Pa., read a paper on "Pneumococcus Antibody Solutions Specific Against Types I, II and III." Discussed by Drs. John A. Murphy, Swarthmore, Pa., and John A. Kolmer, Philadelphia.

The Committee on Standardization of Laboratories, Dr. C. C. Bass, chairman, made the following report:

> The committee finds itself unable to make recommendations as to the adoption of the proposition at the present time on account of the importance of the subject, which it is believed requires extended study.
>
> The committee does recommend that a committee be appointed to consider the matter and make recommendations at the next session of the Association.

It was moved and carried that this report be received and put into effect.

The chairman appointed the same committee to serve during the coming year and to submit a further report at the coming meeting.

Dr. Lloyd J. Thompson, Boston, introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology.

Dr. Kenneth M. Lynch, Dallas, Texas, moved that this resolution be adopted by the section and that Dr. John A. Kolmer be appointed as a committee of one to cooperate with like committees representing the Sections on Urology, Dermatology, Syphilology, Practice of Medicine, and Nervous and Mental Diseases. Unanimously carried.

Dr. L. H. Newburgh, Ann Arbor, Mich., read a paper on "The Production of Arteriosclerosis in Rabbits Caused by Feeding Diets Rich in Animal Proteins." Discussed by Drs. M. W. Lyon, Jr., South Bend, Ind., and L. H. Newburgh, Ann Arbor, Mich.

Dr. Edward Weiss, Philadelphia, read a paper on "The Congenital Factor in Chronic Renal Disease." No discussion.

Dr. Edwin R. Le Count, Chicago, read a paper on "Discussion of Secondary Hemorrhages in the Brain." Discussed by Drs. M. W. Lyon, Jr., South Bend, Ind.; William House, Portland, Ore.; John A. Kolmer, Philadelphia, and Edwin R. Le Count, Chicago.

Dr. M. A. Mortensen, Battle Creek, Mich., read a paper on "Diagnosis and Pathologic Physiology of Beginning Myocardial Inefficiency." No discussion.

Dr. Kenneth M. Lynch, Dallas, Texas, read a paper on "Cultivation of Trichomonas and the Question of Specific Differentiation." Discussed by Drs. John A. Kolmer, Philadelphia, and Kenneth M. Lynch, Dallas, Texas.

FRIDAY, MAY 26—AFTERNOON

A joint meeting was held with the Section on Practice of Medicine and on Pharmacology and Therapeutics. For a report of the proceedings, see the minutes of the Section on Practice of Medicine.

SECTION ON STOMATOLOGY

WEDNESDAY, MAY 24—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Herbert A. Potts, Chicago.

Dr. Herbert A. Potts, Chicago, read the chairman's address, entitled "Infections and Inflammation of the Investing Tissues of the Teeth-Gingivae, Peridental Membrane, Cementum and Alveolar Process." Discussed by Drs. M. N. Federspial, St. Louis; Byron C. Darling, New York, and F. B. Moorehead, Chicago.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Frederick B. Noyes, Chicago, read a paper on "Orthodontia; Six-Year-Old Molar; Early Recognition of Malerruption; Sequela." Discussed by Drs. B. E. Lischer, St. Louis, and Stuart D. Ruggles, Portsmouth, Ohio.

Dr. Percy R. Howe, Boston, read a paper on "Studies on Decalcification of the Teeth and Bones and Regeneration of Bone Through the Diet."

Dr. Clarence J. Grieves, Baltimore, read a paper on "The Effects of Defective Diets on Teeth."

Dr. Paul G. Shipley, Baltimore, read a paper on "Structure of Bone in Relation to Diet."

These three papers were discussed by Drs. Eugene S. Talbot, Chicago; Percy R. Howe, Boston; Dr. Clarence J. Grieves, Baltimore; Frederick B. Noyes, Chicago, and Paul G. Shipley, Baltimore.

THURSDAY, MAY 25—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Herbert A. Potts, Chicago.

Dr. Arthur D. Black, Chicago, read a paper on "What Teeth Should Be Extracted?" Discussed by Drs. R. H. Ivy, Philadelphia; J. H. Kennerley, St. Louis; William L. Shearer, Omaha; S. D. Ruggles, Portsmouth, Ohio; Fulton Risdon, Toronto, Canada; T. L. Gilmer, Chicago; Theodor Blum, New York; T. W. Brophy, Chicago; Virgil Loeb, St. Louis, and Carl W. Waldron, Minneapolis.

Dr. R. H. Ivy, Philadelphia, read a paper on "Observation of Fractures of the Mandible."

Dr. Fulton Risdon, Toronto, Canada, read a paper on "The Treatment of Nonunion of Fractures of the Mandible by Free Bone Grafts."

These two papers were discussed by Drs. Carl W. Waldron, Minneapolis; William Leaman Bainbridge, New York, and F. B. Moorehead, Chicago.

Dr. T. L. Gilmer, Chicago, moved that this discussion be closed and be taken up tomorrow. Seconded and carried.

Dr. D. J. Davis, Chicago, read a paper on "Studies on the Habitat and Pathogenicity of B. Fusiformis." No discussion.

Dr. Hugh W. MacMillan, Cincinnati, read a paper on "Anatomic and Prosthetic Factors Involved in the Development and Correction of Extensive Cysts of the Maxilla." Discussed by Drs. A. D. Black, Chicago; R. H. Ivy, Philadelphia; Theodor Blum, New York, and Herbert A. Potts, Chicago.

FRIDAY, MAY 25—AFTERNOON

The meeting was called to order by the chairman at 2 o'clock.

The following officers were elected: chairman, Robert H. Ivy, Philadelphia; vice chairman, Stuart D. Ruggles, Portsmouth, Ohio; delegate, E. S. Talbot, Chicago.

The papers of Drs. Ivy and Risdon, read and discussed, May 25, were further discussed by Drs. Frank J. Tainter, St. Louis, and Theodor Blum, New York.

Dr. William Allen Pusey, Chicago, read a paper on "Syphilis of the Mouth." Discussed by Dr. William Seaman Bainbridge, New York.

Dr. John W. Nuzum, Chicago, read a paper on "The Experimental Production of Multiple Miniature Metastasizing Carcinomas." No discussion.

Dr. Joseph Rilus Eastman, Indianapolis, read a paper on "Prophylaxis of Malignant Growths of the Mouth, Face and Jaws." No discussion.

Dr. William Seaman Bainbridge, New York, read a paper on "Cancer of the Tongue: Some Pitfalls in Diagnosis and Treatment."

Dr. Lewis L. McArthur, Chicago, read a paper on "Atypical Operation for Tumors of Mouth and Jaw."

Dr. F. J. Novak, Chicago, read a paper on "Electrocoagulation of Malignant Tumors of the Mouth and Oropharynx, and the Effect of This Procedure on Large Adjacent Blood Vessels and Nerves."

These three papers were discussed by Drs. Albert J. Ochsner, Chicago; Gordon B. New, Rochester, Minn.; A. C. Scott, Temple, Texas; J. S. Horsley, Richmond, Va.; Theodor Blum, New York, and George A. Wyeth, New York.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Peter Bassoe, Chicago.

The chairman appointed Dr. W. A. Jones, Minneapolis, and Dr. Frank R. Fry, St. Louis, to serve on the Executive Committee.

Dr. Peter Bassoe, Chicago, read the chairman's address, entitled, "Problems Confronting the Section on Nervous and Mental Diseases." No discussion.

Dr. Frankwood E. Williams, New York, read a paper on "Work and Plans of the National Committee for Mental Hygiene." Discussed by Dr. M. A. Bliss, St. Louis.

Dr. John W. Visher, Waukesha, Wis., read a paper on "A Study in Constitutional Psychopathic Inferiority." Discussed by Drs. Lawrence Kolb, Waukesha, Wis.; Karl A. Menninger, Topeka, Kan.; Groves B. Smith, Godfrey, Ill.; W. A. Jones, Minneapolis; William Edler, St. Louis; J. Moorhead Murdock, Polk, Pa.; Frank A. Ely, Des Moines, Iowa; Hugh T. Patrick, Chicago; Frankwood E. Williams, New York, and John W. Visher, Waukesha, Wis.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and after discussion, was adopted.

Drs. Hugh T. Patrick, Chicago, and David M. Levy, Chicago, presented a paper on "The Diagnosis of Epilepsy." Discussed by Drs. A. L. Skoog, Kansas City, Mo.; F. E. Coulter, Omaha; Walter Timme, New York; Tom A. Williams, Washington, D. C.; Charles A. L. Reed, Cincinnati; M. L. Perry, Topeka, Kan., and Hugh T. Patrick, Chicago.

Dr. Julius Grinker, Chicago, read a paper on "Further Experiences with Luminal in Epilepsy." Discussed by Drs. David S. Booth, St. Louis; F. E. Coulter, Omaha; A. L. Skoog, Kansas City, Mo.; E. T. Ponder, Little Rock, Ark.; Charles R. Woodson, St. Joseph, Mo., and Julius Grinker, Chicago.

Dr. A. L. Skoog, Kansas City, Mo., read a paper on "Methyl Alcohol Intoxication." No discussion.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9 o'clock by the chairman.

Dr. Charles H. Frazier, Philadelphia, read a paper on "Review of a Series of Operable Tumors of the Spinal Cord from the Standpoint of Diagnosis and Technic." Discussed by Drs. M. A. Bliss, St. Louis; Julius Grinker, Chicago; F. E. Coulter, Omaha; A. W. Adson, Rochester, Minn.; Hugh T. Patrick, Chicago; Leo M. Crafts, Minneapolis, and Charles H. Frazier, Philadelphia.

Dr. Walter E. Dandy, Baltimore, read a paper on "The Localization of Brain Tumors." Discussed by Drs. Ernest Sachs, St. Louis; A. W. Adson, Rochester, Minn.; Frank A. Ely, Des Moines, Iowa; L. L. McArthur, Chicago; A. L. Skoog, Kansas City, Mo.; A. L. Gray, Richmond, Va., and Walter E. Dandy, Baltimore.

Dr. I. Leon Meyers, Los Angeles, read a paper on "Magnus and de Kleijn Phenomena in Brain Lesions of Man." Discussed by Drs. Mary Freeman, Perrine, Fla., and I. Leon Meyers, Los Angeles.

Dr. C. L. Woolsey, Boston, read a paper on "Experimental Vestibular Tremors." Discussed by Drs. I. Leon Meyers, Los Angeles; A. L. Skoog, Kansas City, Mo., and C. L. Woolsey, Boston.

Dr. Leo M. Crafts, Minneapolis, read a paper on "Mixed-Cell Sarcoma of the Brain, with Recovery Following Third Operative Interference."

Dr. Tom B. Throckmorton, Des Moines, Iowa, read a paper on "Glioma of the Cerebral Hemispheres. A Comparative Study of Two Cases."

These two papers were discussed by Dr. George A. Moleen, Denver.

Dr. Henry W. Woltman, Rochester, Minn., read a paper on "Malignant Tumors of the Nasopharynx with Extension to the Nervous System." Discussed by Drs. Gordon B. New, Rochester, Minn., and M. A. Bliss, St. Louis.

Drs. H. C. Solomon, Boston, and Lloyd J. Thompson, Boston, presented a paper on "Some Experimental Data Concerning the Circulation of the Cerebrospinal Fluid." Discussed by Drs. W. A. Jones, Minneapolis; Lewis J. Pollock, Chicago; A. L. Skoog, Kansas City, Mo.; Karl A. Menninger, Topeka, Kan.; Charles R. Ball, St. Paul; Mary Freeman, Perrine, Fla., and Lloyd J. Thompson, Boston.

FRIDAY, MAY 26—MORNING

The meeting was called to order at 9:15 by the chairman.

The following officers were elected: chairman, Dr. Walter Timme, New York; vice chairman, Dr. M. A. Bliss, St. Louis; secretary, Dr. James B. Ayer, Boston; delegate, Dr. Charles R. Ball, St. Paul; alternate, Dr. Tom B. Throckmorton, Des Moines, Iowa.

Dr. Lewis J. Pollock, Chicago, read a paper on "Accessory Muscle Movements in Deltoid Paralysis." No discussion.

Dr. E. C. Rosenow, Rochester, Minn., read a paper on "Results of Experimental Study in the Etiology of Epidemic Encephalitis." Discussed by Drs. Lewis J. Pollock, Chicago, and E. C. Rosenow, Rochester, Minn.

Dr. William House, Portland, Ore., read a paper on "The Sequelae of Epidemic Encephalitis." Discussed by Drs. M. A. Bliss, St. Louis; F. E. Coulter, Omaha; Walter Timme, New York; George A. Moleen, Denver; W. A. Jones, Minneapolis; Leo M. Crafts, Minneapolis; Julius Grinker, Chicago; Charles R. Ball, St. Paul; J. C. Michael, Minneapolis; Frank A. Ely, Des Moines, Iowa, and William House, Portland, Ore.

Dr. Loyd Thompson, Hot Springs, Ark., introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology. After discussion, the motion was put. Seconded and carried.

The chairman appointed Dr. Harry C. Solomon, Boston, to act as a member of the committee.

Dr. Tom B. Throckmorton, Des Moines, Iowa, moved that a rising vote of thanks be extended as an expression of appreciation for the courtesy so kindly extended by the local neurologic society. Seconded and carried.

Dr. E. M. Hammes, St. Paul, read a paper on "Psychoses Associated with Sydenham's Chorea." Discussed by Drs. Frank R. Fry, St. Louis; Tom A. Williams, Washington, D. C.; Lawson G. Lowrey, Iowa City, and Groves B. Smith, Godfrey, Ill.

Dr. Lawson G. Lowrey, Iowa City, read a paper on "Pellagra: A Neuropathologic Study." Discussed by Dr. Lewis J. Pollock, Chicago.

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SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

Dr. Ernest Dwight Chipman, San Francisco, read the chairman's address.

The following papers were read as a symposium on "Syphilis":

Dr. James R. Driver, Cleveland: "A Statistical Report on the Examination of Four Hundred and Sixty Cases with Genital Lesions."

Drs. H. L. Keim and Udo J. Wile, Ann Arbor, Mich.: "The Kahn Precipitin Test in the Diagnosis of Syphilis."

Dr. Albert Keidel, Baltimore: "Studies in Asymptomatic Neurosyphilis, IV, The Apparent Rôle of Immunity in the Genesis of Neurosyphilis."

Drs. E. C. White, J. H. Hill, J. E. Moore and H. H. Young, Baltimore: "A New Mercurial for the Intravenous Treatment of Syphilis: First report of Chemical, Animal and Clinical Experiments and Results."

These four papers were discussed by Drs. Udo J. Wile, Ann Arbor, Mich.; James Herbert Mitchell, Chicago; Richard L. Sutton, Kansas City, Mo.; John E. Lane, New Haven, Conn.; Harry G. Irvine, Minneapolis; William Allen Pusey, Chicago; Joseph Grindon, St. Louis; Victor G. Vecki, San Francisco; F. W. Cregor, Indianapolis; James R. Driver, Cleveland; H. L. Keim, Ann Arbor, Mich.; Albert Keidel, Baltimore, and J. E. Moore, Baltimore.

The chairman appointed Dr. H. G. Irvine, Minneapolis, and Dr. William T. Corbett, Cleveland, to serve on the Executive Committee in the places of Dr. Walter J. Highman, New York, and Dr. Oliver S. Ormsby, Chicago, who were absent.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Herman Goodman, New York, read a paper on "Ulcerating Granuloma (Granuloma Inguinale). Discussed by Drs. Joseph Grindon, St. Louis; A. J. Markley, Denver; Jeffrey C. Michael, Houston, Texas; William Litterer, Nashville, Tenn.; Jesse B. Shelmire, Dallas, Texas; Harold N. Cole, Cleveland; Earl D. Crutchfield, Galveston, Texas, and Herman Goodman, New York.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Frank W. Cregor, Indianapolis, read a paper on "Sporotrichosis." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; J. M. King, Nashville, Tenn.; Everett S. Lain, Oklahoma City; John H. King, Nashville, Tenn., and Frank W. Cregor, Indianapolis.

Dr. Erwin P. Zeisler, Chicago, read a paper on "Pityriasis Rubra Pilaris—Familial Type." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Harold N. Cole, Cleveland; David Lieberthal, Chicago; William Allen Pusey, Chicago, and Erwin P. Zeisler, Chicago.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9:10 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

Dr. Moses Scholtz, Los Angeles, read a paper on "Lupus Erythematosus Acutus Disseminatus Hemorrhagicus." Discussed by Drs. W. H. Goeckerman, Rochester, Minn.; Everett S. Lain, Oklahoma City; William T. Corlett, Cleveland; Marcus Haase, Memphis, Tenn.; William Frick, Kansas City, Mo.; Richard L. Sutton, Kansas City, Mo., and Moses Scholtz, Los Angeles.

Drs. H. H. Hazen and F. J. Eichenlaub, Washington, D. C., presented a paper on "Leukoplakia." Discussed by Drs. F. E. Senear, Chicago, William H. Guy, Pittsburgh; J. M. King, Nashville, Tenn.; William T. Corlett, Cleveland; I. L. McGlasson, San Antonio, Texas; Erwin P. Zeisler, Chicago; W. H. Goeckerman, Rochester, Minn., and F. J. Eichenlaub, Washington, D. C.

Drs. Marcus Haase, Clement H. Marshall and E. R. Hall, Memphis, Tenn., presented a paper on "Local Blastomycosis." Discussed by Drs. F. E. Senear, Chicago; Louis E. Schmidt, Chicago; Ernest D. Chipman, San Francisco; J. M. King, Nashville, Tenn.; Earl D. Crutchfield, Galveston, Texas; Harold N. Cole, Cleveland, and Clement R. Marshall, Memphis, Tenn.

Drs. Howard I. Morrow, Ernest L. Walker and Hiram E. Miller, San Francisco, presented a paper on "Experience with Chaulmoogra Oil Derivatives in the Treatment of Leprosy at San Francisco." Discussed by Drs. William T. Corlett, Cleveland; R. M. Wilson, Kwangju, Korea; I. L. McGlasson, San Antonio, Texas; Ernest D. Chipman San Francisco; Floyd Stewart, St. Louis; Edward A. Oliver, Chicago, and Hiram E. Miller, San Francisco.

Mr. C. N. Moore, Schenectady, N. Y., read a paper on "The Physical Principles Underlying the Development of High Voltage Roentgen-Ray Apparatus." Discussed by Drs. William Allen Pusey, Chicago; Harold N. Cole, Cleveland; F. J. Eichenlaub, Washington, D. C., and William H. Guy, Pittsburgh, and Mr. C. N. Moore, Schenectady, N. Y.

Dr. C. Guy Lane, Boston, read a paper on "Industrial Dermatoses at the Massachusetts General Hospital." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Joseph Grindon, St. Louis; Jeffrey Michael, Houston, Texas; Moses Scholtz, Los Angeles; T. J. Burke, Pittsburgh; William Allen Pusey, Chicago; C. H. Ball, Tulsa, Okla.; L. S. Ayres, Los Angeles; Lester Hollander, Pittsburgh; A. J. Markley, Denver; David Lieberthal, Chicago, and C. Guy Lane, Boston.

Dr. W. H. Goeckerman, Rochester, Minn., read a paper on "A Peculiar Discoloration of the Skin Probably Resulting from Mercurial Compounds (Calomel) in Proprietary Face Creams." Discussed by Drs. F. J. Eichenlaub, Washington, D. C.; Richard L. Sutton Kansas City, Mo.; J. M. King, Nashville, Tenn.; Ernest D. Chipman, San Francisco; Edwin P. Zeisler, Chicago, and W. H. Goeckerman, Rochester, Minn.

FRIDAY, MAY 26—MORNING

The meeting was called to order at 9:10 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

The following officers were elected: chairman, Dr. Marcus Haase, Memphis, Tenn.; vice chairman, Dr. Frank W. Cregor, Indianapolis; secretary, Dr. Harold N. Cole, Cleveland; delegate, Dr. Walter J. Highman, New York; alternate, Dr. Everett S. Lain, Oklahoma City.

Dr. William Allen Pusey moved that the chairman appoint a committee of one to work in conjunction with a committee from the Sections on the Practice of Medicine, Urology, Nervous and Mental Diseases, Pathology and Physiology and Pediatrics on a standardization of the Wassermann test.

This motion was seconded by several members and unanimously carried.

The chairman appointed Dr. Martin F. Engman, St. Louis, to represent the Section on Dermatology and Syphilology on this committee.

The following papers were read as a symposium on "Malignancy":

Dr. Howard James Parkhurst, Toledo, Ohio: "The Tissue Reaction in Malignant Epitheliomas of the Skin: Its Value in Diagnosis and in Prognosis."

Drs. Walter J. Highman and Ray H. Rulison, New York: "Expectancy in Roentgen Treatment of Skin Lesions from the Pathologic Standpoint."

Dr. Laurence Taussig, San Francisco: "Carcinoma of the Tongue and Its Treatment with Radium."

Dr. Joseph C. Bloodgood, Baltimore: "Surgical Treatment of Cancer of the Lip."

Dr. G. E. Pfahler, Philadelphia: "Treatment of Cancer of the Lip by Electrocoagulation."

Dr. Everett S. Lain, Oklahoma City: "The Treatment of Cancer of the Lip by Radiotherapy."

These six papers were discussed by Drs. Gordon B. New, Rochester, Minn.; Joseph C. Bloodgood, Baltimore; F. J. Eichenlaub, Washington, D. C.; William H. Guy, Pittsburgh; Richard L. Sutton, Kansas City, Mo.; G. A. Wyeth, New York; C. H. Ball, Tulsa, Okla.; T. C. Kennedy, Indianapolis; Frank W. Cregor, Indianapolis; John Howard King, Nashville, Tenn.; Moses Scholtz, Los Angeles; I. L. McGlasson,

San Antonio, Texas; Davis W. Goldstein, Fort Smith, Ark; Earl D. Crutchfield, Galveston, Texas; Ben R. Kirkendall, Columbus, Ohio; H. J. Parkhurst, Toledo, Ohio; R. H. Rulison, New York; Laurence Taussig, San Francisco; George E. Pfahler, Philadelphia, and Everett S. Lain, Oklahoma City.

Dr. Marcus Haase, Memphis, moved a rising vote of thanks to the officers of the section for the considerate and courteous treatment accorded the members, and to the St. Louis profession for their excellent clinic and generous hospitality. This motion was seconded and unanimously carried.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9:20 by the chairman, Dr. S. W. Welch, Montgomery, Ala.

Dr. J. D. McLean, Philadelphia, presented the resolution referred to in the minutes of the Section on Practice of Medicine. The resolution was referred to the Executive Committee.

Dr. S. W. Welch, Montgomery, Ala., read the chairman's address, entitled "Training in Sociology and Public Health an Essential in Medical Education."

Dr. A. J. Warren, Topeka, Kan., read a paper on "The County as a Health Unit." Discussed by Drs. W. S. Rankin, Raleigh, N. C.; J. A. Hayne, Columbia, S. C., and W. L. Holt, Knoxville, Tenn.

Dr. John D. McLean, Philadelphia, read a paper on "Obligations of Preventive Medicine." Discussed by Drs. Allan J. McLaughlin, Washington, D. C.; Eugene L. Fisk, New York; H. B. Wood, Dodge City, Kan., and John D. McLean, Philadelphia.

Dr. W. A. Dearman, Long Beach, Miss., read a paper on "The Attitude of the General Practitioner Toward Established and Progressive Public Health Policies." Discussed by Drs. Oscar Dowling, New Orleans, and W. A. Dearman, Long Beach, Miss.

Dr. W. S. Rankin, Raleigh, N. C., read a paper on "The Mutual Interest of Profession and Public." Discussed by Drs. W. S. Leathers, University, Miss.; A. S. Hershfield, Chicago; A. T. McCormack, Louisville, Ky.; Rachelle S. Yarros, Chicago; D. B. McEachern, Chicago, and W. S. Rankin, Raleigh, N. C.

Dr. Otto Geier, Cincinnati, read a paper on "Some Reflections on the Recent Education of Health Officers' Conference." Discussed by Dr. M. P. Ravenel, Columbia, Mo.

Dr. Matthias Nicoll, Jr., Albany, N. Y., read a paper on "Politics and the Health Officer." Discussed by Drs. A. T. McCormack, Louisville, Ky.; Victor C. Vaughan, Washington, D. C.; J. A. Hayne, Columbia, S. C., and Matthias Nicoll, Jr., Albany, N. Y.

Dr. M. P. Ravenel, Columbia, Mo., introduced a resolution urging on Congress enactment of legislation to accept a gift made to the Surgeon-General's Library by the Prudential Insurance Company.

The resolution was referred to the Executive Committee. (Not transmitted to the House of Delegates.)

Dr. C. E. Terry moved that this section request the Council on Health and Public Instruction to endeavor to have printed Dr. Rankin's paper on "The Mutual Interest of Profession and Public," at the earliest possible moment in THE JOURNAL, to reprint it promptly, and to see that a copy is sent to every county medical society in this country, and, if possible, to extend the circulation of the paper farther than that. Seconded and carried. Referred to the Executive Committee.

(Not transmitted to the House of Delegates.)

Dr. A. T. McCormack then moved that the Executive Committee be requested to draft a resolution to be presented to the House of Delegates, approving the suggestions made in Dr. Rankin's paper. Seconded and carried.

THURSDAY, MAY 25—MORNING

The meeting was called to order at 9:20 by the chairman.

The first order of business was a partial report of the Executive Committee.

The Executive Committee recommended the adoption of the resolution introduced by Dr. McLean. Seconded and carried.

It also recommended the adoption of the resolution introduced by Dr. Terry. Seconded and carried.

The Executive Committee reported that it was too late to introduce the resolution of Dr. Ravenel in the House of Delegates, but recommended that the sense of the resolution be approved by the section. On motion, seconded and carried, the recommendation was adopted.

It was moved and seconded that Arthur W. Hedrich, secretary of the American Public Health Association, be nominated Associate Fellow by the section. Carried.

Dr. John Dill Robertson, Chicago, read a paper on "Community Health Fundamentals." Discussed by Drs. Herman N. Bundesen, Chicago; Allen J. Hruby, Chicago; A. F. Campbell, Springfield, Ill.; M. P. Ravenel, Columbia, Mo.; Isaac D. Rawlings, Springfield, Ill.; A. C. Tenney, Chicago; J. D. Dowling, Birmingham, Ala., and John Dill Robertson, Chicago.

Dr. H. S. Cumming, Washington, D. C., read a paper on "Tuberculosis Among the Ex-Service Men, with Special Reference to Its Bearing on Public Health." Discussed by Drs. Henry Boswell, Sanatorium, Miss.; H. A. Pattison, New York; J. J. Singer, St. Louis, and H. S. Cumming, Washington, D. C.

Dr. William A. Evans, Chicago, read a paper on "Seasonal Distribution of Deaths and Some Conclusions Based Thereon." Discussed by Frederick L. Hoffman, Newark, N. J., and Drs. S. J. Crumbine, Topeka, Kan., and William A. Evans, Chicago.

Dr. William H. Park, New York, read a paper on "Immunization Against Diphtheria and the Use of Toxin-Antitoxin." Discussed by Drs. Abraham Zingher, New York; John F. Hogan, Baltimore; William H. Thaler, St. Louis; C. A. Earle, Des Plaines, Ill.; W. S. Rankin, Raleigh, N. C., and Abraham Zingher, New York.

Dr. J. Howard Beard, Urbana, Ill., read a paper on "The Contribution of University Health Services to Public Health." Discussed by Drs. John Sundwall, Ann Arbor, Mich., and J. Howard Beard, Urbana, Ill.

Dr. Frederick R. Green, Chicago, read a paper on "Legal Status of Physicians and Sectarians." Discussed by Drs. W. C. Woodward, Boston; D. B. McEachern, Chicago; B. C. Darling, New York, and Frederick R. Green, Chicago.

Dr. M. M. Carrick, Dallas, Texas, introduced a resolution concerning care of ex-service men. Resolution referred to Executive Committee and transmitted to the House of Delegates.

FRIDAY, MAY 26—MORNING

The meeting was called to order at 9:05 by the chairman.

Dr. C. C. Bass, New Orleans, read a paper on "A Discussion of Malaria Control Operations in the Ultimate Suppression of the Disease." Discussed by Drs. L. D. Fricks, Memphis, Tenn.; M. P. Ravenel, Columbia, Mo.; Isaac D. Rawlings, Springfield, Ill.; S. W. Welch, Montgomery, Ala.; W. C. Woodward, Boston, and C. C. Bass, New Orleans.

Dr. Harry Garfield Irvine, Minneapolis, read a paper on "Some Notes on the Effectiveness of the Venereal Disease Program." Discussed by Drs. Valeria Parker, Washington, D. C.; William F. Whyte, Madison, Wis.; Carl Voeglin, Washington, D. C.; J. P. Bowdoin, Adairsville, Ga.; John F. Hogan, Baltimore, and Harry Garfield Irvine, Minneapolis.

Dr. Taliaferro Clark, Washington, D. C., read a paper on "Nutrition of the Schoolchild." Discussed by Drs. Borden S. Veeder, St. Louis; John Dill Robertson, Chicago; Allen J. Hruby, Chicago; W. L. Holt, Knoxville, Tenn.; Isaac D. Rawlings, Springfield, Ill.; Florence Meredith, Philadelphia; James Stewart, St. Louis, and Taliaferro Clark, Washington, D. C.

Dr. Anna E. Rude, Washington, D. C., read a paper on "The Sheppard-Towner Act in Relation to Public Health." Discussed by Drs. Marry Riggs Noble, Colorado Springs, Colo.; Taliaferro Clark, Washington, D. C.; W. C. Woodward, Boston; Carl Henry Davis, Milwaukee; S. W. Welch, Montgomery, Ala.; D. B. McEachern, Chicago; A. N. Creadick, New Haven, Conn., and Anna E. Rude, Washington, D. C.

Dr. Joseph N. Gehlen, Minneapolis, read a paper on "Detection of Typhoid Carriers, with Report of Four Outbreaks." Discussed by Drs. James J. Durrett, Memphis, Tenn., and Joseph N. Gehlen, Minneapolis.

Dr. B. Franklin Royer, Halifax, Nova Scotia, read a paper on "Health Centers of the Massachusetts-Halifax Health Commission." Discussed by Drs. Isaac D. Rawlings, Springfield, Ill., and Anna E. Rude, Washington, D. C.

The following officers were elected: chairman, John A. Ferrell, New York; vice chairman, John Sundwall, Ann Arbor, Mich.; secretary, W. S. Leathers, University, Miss. (term not expired); delegate, W. S. Leathers, University, Miss.; alternate, Paul A. Turner, Seattle.

SECTION ON UROLOGY

WEDNESDAY, MAY 24—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

The chairman appointed Dr. Louis E. Schmidt, Chicago, and Dr. Arthur L. Chute, Boston, to serve on the Executive Committee in the places of Dr. William E. Lower, Cleveland, and Dr. Richard F. O'Neill, Boston, who were absent.

The following papers were read as a symposium on "Blood Chemistry in Kidney Disease":

Dr. Hilding Berglund, Stockholm, Sweden: "The Nitrogen Retention in Bright's Disease: Its Significance for Diagnosis and Prognosis."

Drs. John R. Caulk and William H. Olmsted, St. Louis: "Present Status of Blood Chemistry in Surgical Lesions of the Kidney."

Dr. J. Bentley Squier, New York: "The Significance of Chemical Blood Findings in Urologic and Allied Conditions."

Drs. J. T. Geraghty and William A. Frontz, Baltimore: "The Value of the Estimation of the Blood Content of Urea, Nonprotein Nitrogen, Creatinin and Carbon Dioxid as an Index of Renal Function."

Dr. B. A. Thomas, Philadelphia: "The Relative Value of Indigocarmin as a Functional Kidney Test and Blood Chemistry in Urologic Surgery."

These five papers were discussed by Drs. L. G. Rowntree, Rochester, Minn.; William Engelbach, St. Louis; Hugh Cabot, Ann Arbor, Mich.; Victor C. Meyers, New York; Russell M. Wilder, Rochester, Minn.; Benjamin S. Barringer, New York; George Lee Eaton, San Francisco; Victor G. Vecki, San Francisco; Louis E. Schmidt, Chicago; Henry J. Scherck, St. Louis; Hilding Berglund, Stockholm, Sweden, and B. A. Thomas, Philadelphia.

Dr. Edward L. Young, Jr., Boston, read a paper on "The Treatment of Urinary Incontinence in the Female." Discussed by Drs. Hugh Cabot, Ann Arbor, Mich., and Edward L. Young, Jr., Boston.

Dr. A. Raymond Stevens, New York, read a paper on "Hematurias of Obscure Origin." Discussed by Drs. Herman L. Kretschmer, Chicago; Louis E. Schmidt, Chicago; Hugh Cabot, Ann Arbor, Mich.; G. R. Satterlee, New York; A. I. Folsom, Dallas, Texas, and A. Raymond Stevens New York.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

THURSDAY, MAY 25—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

Dr. H. W. E. Walther, New Orleans, read a paper on "Intravesical Management of Obstructions in the Ureter, with Special Reference to Stone and Stricture." Discussed by Drs. L. R. Wharton, Baltimore; James A. Gardner, Buffalo; Robert H. Herbst, Chicago; Arthur L. Chute, Boston; B. A. Thomas, Philadelphia; Benjamin S. Barringer, New York; Henry G. Bugbee, New York; Bransford Lewis, St. Louis; Victor D. Lespinasse, Chicago; Herman L. Kretschmer, Chicago, and H. W. E. Walther, New Orleans.

Dr. James A. Gardner, Buffalo, read the chairman's address, entitled "Socialistic Tendencies in Medicine."

Dr. A. J. Crowell, Charlotte, N. C., read a paper on "Abdominal Pain Due to Ureteral Obstruction and Its Treatment." Discussed by Drs. Bransford Lewis, St. Louis; A. B. Cecil, Los Angeles; Arthur L. Chute, Boston; Joseph H. Smith, Memphis, Tenn.; Edward L. Young, Jr., Boston; Hermon C. Bumpus, Rochester, Minn., and A. J. Crowell, Charlotte, N. C.

The Secretary presented the following resolution:

WHEREAS, The Wassermann test, which up to date remains the most valuable laboratory aid in the diagnosis of syphilis, has been the subject of a great deal of abuse, and

WHEREAS, This abuse has robbed it of a great deal of its value, and

WHEREAS, This abuse seems to consist mainly of the following: (1) the use of many different methods of technic by different laboratories, and (2) the employment of insufficiently trained workers in many laboratories; therefore, be it

Resolved, That the Chairman of this section appoint a committee of one to cooperate with like committees representing the Sections on Practice of Medicine, Dermatology and Syphilology, Nervous and Mental Diseases, Pediatrics, and Pathology and Physiology, in an endeavor to formulate a plan which will lead to the adoption by all laboratories of a standard method of technic for the performance of the Wassermann test, and the employment by all laboratories of only thoroughly trained technicians.

Dr. Benjamin S. Barringer, New York, moved that the resolution be accepted and adopted, and that the chairman appoint a committee of one as suggested in the resolution. Seconded by several members and unanimously carried.

The chairman appointed Dr. B. A. Thomas, Philadelphia, to represent the Section on Urology on this committee.

Dr. Frank Hinman, San Francisco, presented a paper on "Ureteral Transplantation: Its Indications, Routes and an Experimental Study of Duodenal Reabsorption." Discussed by Drs. A. B. Cecil, Los Angeles; Hermon C. Bumpus, Rochester, Minn.; A. I. Folsom, Dallas, Texas, and A. E. Belt, San Francisco.

Drs. H. W. Plaggemeyer and R. E. Cummings, Detroit, presented a paper on "Standard Kidney Operations, with Renal Function Studies: A Consideration of Reversible and Irreversible Metabolism in Dogs." No discussion.

Drs. E. S. Judd, William F. Braasch and A. J. Scholl, Rochester, Minn., presented a paper on "Surgical Indications with Fused (Horseshoe) Kidney." Discussed by Drs. Henry G. Bugbee, New York; Herman L. Kretschmer, Chicago; Benjamin S. Barringer, New York; L. T. LeWald, New York; Clarence Bandler, New York, and E. S. Judd, Rochester, Minn.

The Chairman appointed a nominating committee consisting of Drs. Arthur L. Chute, Boston; A. I. Folsom, Dallas, Texas, and B. A. Thomas, Philadelphia, with instructions to report on Friday afternoon.

Dr. J. H. Morrissey, New York, read a paper on "Urography as a Method of Diagnosis." Discussed by Drs. Hermon C. Bumpus, Rochester, Minn.; L. T. LeWald, New York, and J. H. Morrissey, New York.

FRIDAY, MAY 26—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

The following officers were elected: chairman, Dr. Henry G. Bugbee, New York; vice chairman, Dr. C. E. Burford, St. Louis; secretary, Dr. Herman L. Kretschmer, Chicago; delegate, Dr. Carl L. Wheeler, Lexington, Ky.; alternate, Dr. A. I. Folsom, Dallas, Texas.

The secretary announced that those desiring copies of the Transactions of the Section on Urology should send their subscriptions directly to the American Medical Association.

He also asked for an expression of opinion as to whether the former practice of sending copies of the Transactions to an approved list of hospitals, libraries and some foreign urologists should be resumed, these additional copies to be subscribed for by the members of the section. No action was taken.

Dr. Arthur B. Cecil, Los Angeles, read a paper on "A Technic for Doing Perineal Prostatectomy." Discussed by Drs. James A. Gardner, Buffalo; Henry G. Bugbee, New York; Arthur L. Chute, Boston; A. Raymond Stevens, New York; A. I. Folsom, Dallas, Texas; John R. Caulk, St. Louis, and Arthur B. Cecil, Los Angeles.

Dr. Arthur L. Chute, Boston, read a paper on "Spinal Anesthesia in Prostatectomy." Discussed by Drs. Bransford Lewis, St. Louis; A. J. Crowell, Charlotte, N. C.; H. W. E. Walther, New Orleans; A. Raymond Stevens, New York, and Arthur L. Chute, Boston.

Drs. Robert H. Herbst and Alvin Thompson, Chicago, presented a paper on "Carcinoma of the Prostate."

Dr. Benjamin S. Barringer, New York, read a paper on "Bladder Carcinoma: Statistics of Radium Removal Versus Surgical Removal."

These two papers were discussed by Drs. Henry G. Bugbee, New York; Herman L. Kretschmer, Chicago; B. A. Thomas, Philadelphia; Hermon C. Bumpus, Rochester, Minn.; Budd C. Corbus, Chicago; A. J. Crowell, Charlotte, N. C.; Arthur L. Chute, Boston, and Robert H. Herbst, Chicago.

Drs. Budd C. Corbus and Vincent J. O'Conor, Chicago, presented a paper on "The Tabetic Bladder from the Standpoint of the Urologist." Discussed by Drs. Harry G. Gredit-zer, St. Louis; R. E. Cummings, Detroit, and Budd C. Corbus, Chicago.

Dr. Clinton K. Smith, Kansas City, Mo., read a paper on "Urology and the General Surgeon." Discussed by Drs. James A. Gardner, Buffalo, N. Y., and F. B. Young, Gering, Neb.

Dr. George F. Farnam, Santa Barbara, Calif., read a paper on "Prostatic Massage: A Practical and Theoretical Discussion." Discussed by Drs. James A. Gardner, Buffalo; Bransford Lewis, St. Louis; Herman L. Kretschmer, Chicago; A. I. Folsom, Dallas, Texas, and George F. Farnam, Santa Barbara, Calif.

At the close of the program Dr. Arthur L. Chute, Boston, moved a standing vote of thanks to the officers of the section for their fair and courteous treatment of the members. Seconded and unanimously carried.

Dr. James A. Gardner, Buffalo, moved a vote of thanks to the local members of the profession who had been such generous and hospitable hosts. Unanimously carried.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, MAY 24—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. H. Winnett Orr, Lincoln, Neb.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Pathogenesis and Management of Certain Dyskinesias Irremediable by Operative or Prosthetic Measures." Discussed by Drs. Hugh T. Patrick, Chicago; M. S. Henderson, Rochester, Minn., and Tom A. Williams, Washington, D. C.

Dr. Charles S. Venable, San Antonio, Texas, read a paper on "An Apparatus for Fixation of Fractures of the Femur: Report of Cases." Discussed by Drs. Nathaniel Allison, St. Louis; W. C. Campbell, Memphis, Tenn., and C. S. Venable, San Antonio, Texas.

Dr. Julius H. Hess, Chicago, read a paper on "Premature Infants—Malformations and Diseases of Interest to the Orthopedic Surgeon." Discussed by Drs. W. McKim Marriott, St. Louis, and Julius H. Hess, Chicago.

Dr. Frederick C. Kidner, Detroit, read a paper on "Indication for Operation on Fractured Femur." Discussed by Drs. William R. Cubbins, Chicago; C. B. Francisco, Kansas City, Mo.; Philip H. Kreuscher, Chicago; H. D. Wood, Fayetteville, Ark.; Paul B. Magnuson, Chicago; E. W. Ryerson, Chicago, and Frederick C. Kidner, Detroit.

Dr. William O'Neill Sherman, Pittsburgh, read a paper on "Poor Functional Results in the Treatment of Fractures." Discussed by Drs. Hugh McKenna, Chicago, and B. C. Darling, New York.

Dr. R. Wallace Billington, Nashville, Tenn., read a paper on "Treatment of Industrial Accidents of the Knee." Discussed by Drs. A. L. Fisher, San Francisco; M. S. Henderson, Rochester, Minn.; G. D. Marshall, Kokomo, Ind., and R. Wallace Billington, Nashville, Tenn.

Dr. William S. Baer, Baltimore, read a paper on "The Present State of Arthroplasties." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; E. W. Ryerson, Chicago; J. M. Neff, Chicago, and William S. Baer, Baltimore.

The chairman appointed Dr. J. Archer O'Reilly, St. Louis, a member of the Executive Committee in the absence of Dr. G. W. Hawley.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was laid on the table until the Friday meeting.

THURSDAY, MAY 25—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Willis C. Campbell, Memphis, Tenn.

Dr. Arthur L. Fisher, San Francisco, read a paper on "The Results of Ankylosing Operations in Tuberculosis of the Spine." Discussed by Drs. M. S. Henderson, Rochester, Minn.; F. C. Kidner, Detroit; Charles A. Parker, Chicago; Charles A. Stone, St. Louis; Henry W. Frauenthal, New York, and A. L. Fisher, San Francisco.

Dr. Louis B. Wilson, Rochester, Minn., read a paper on "Teaching of the Fundamentals of Surgery from the Point of View of the Graduate School." Discussed by Dr. Dean Lewis, Chicago.

Dr. Robert B. Cofield, Cincinnati, read a paper on "Bony Bridging in Tuberculosis of the Spine." Discussed by Drs. F. C. Kidner, Detroit; W. C. Campbell, Memphis, Tenn., and Robert B. Cofield, Cincinnati.

Dr. H. Winnett Orr, Lincoln, Neb., read the chairman's address, entitled "The Fundamental Principles of Orthopedic Reconstruction and Industrial Surgery: The Real Lessons of the Great War."

Dr. Allen B. Kanavel, Chicago, read a paper on "Surgery of the Hand." Discussed by Drs. Vilray P. Blair, St. Louis; M. A. Bernstein, Chicago, and Allen B. Kanavel, Chicago.

Dr. Stewart L. McCurdy, Pittsburgh, read a paper on "Bone Lesions of Twenty Different Conditions." Discussed by Drs. J. Archer O'Reilly, St. Louis, Mo., and Stewart L. McCurdy, Pittsburgh.

FRIDAY, MAY 26—AFTERNOON

The meeting was called to order at 2:10 by the chairman.

The following officers were elected: chairman, Willis C. Campbell, Memphis, Tenn.; vice chairman, Henry B. Thomas, Chicago; secretary, J. Archer O'Reilly, St. Louis; delegate, John Ridlon, Chicago; alternate, F. R. Ober, Boston.

Dr. W. C. Campbell moved a vote of thanks to Dr. Henry B. Thomas for the efficient service he had given the section as secretary during the last five years. Seconded and carried.

The chairman appointed Dr. F. R. Ober, Boston, as member of the Executive Committee in the absence of Dr. M. S. Henderson.

Dr. B. G. Chollett, Toledo, Ohio, read a paper on "A Report of the Year's Work on Crippled Children in Ohio." Discussed by Dr. Robert B. Cofield, Cincinnati.

Dr. Philip Lewin, Chicago, read a paper on "Pseudohypertrophic Muscular Paralysis: Report of Fifteen Cases." Discussed by Drs. L. J. Pollock, Chicago; Charles A. Parker, Chicago; F. R. Ober, Boston; Philip Hoffman, St. Louis; Henry W. Frauenthal, New York; H. W. Orr, Lincoln, Neb., and Philip Lewin, Chicago.

Dr. Kellogg Speed, Chicago, read a paper on "The Pathology of Fracture and Dislocation of the Carpal Bones." Discussed by Drs. A. L. Fisher, San Francisco; C. B. Francisco, Kansas City, Mo., and Kellogg Speed, Chicago.

Dr. Harold R. Conn, Akron, Ohio, read a paper on "The Importance of Prevention and Early Treatment in Disabilities Due to Injuries of the Lower Back." Discussed by Drs. J. Archer O'Reilly, St. Louis, and Henry W. Frauenthal, New York.

Drs. Frank R. Ober and Bronson Crothers, Boston, presented a paper on "Functional Aspects of Birth Injuries of the Central Nervous System." No discussion.

Dr. Charlton Wallace, New York, read a paper on "After-Care of Infantile Paralysis."

Dr. Henry O. Feiss, Cleveland, read a paper on "Early Activation of Muscles in Infantile Paralysis."

These two papers were discussed by Drs. Frank R. Ober, Boston, Charlton Wallace, New York, and Henry O. Feiss, Cleveland.

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SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, MAY 24—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. H. W. Soper, St. Louis.

Dr. H. W. Soper, St. Louis, read the chairman's address, entitled "Physiologic Standards in Gastro-Enterology." No discussion.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. William M. Beach, Pittsburgh, moved that the chairman appoint a committee to draft suitable resolutions on the death of Dr. Dwight Henderson Murray of Syracuse, N. Y. Seconded and carried.

The chairman appointed Drs. William M. Beach, Pittsburgh, and Louis J. Hirschman, Detroit, to act as the committee.

Dr. John A. Lichty, Pittsburgh, read a paper on "A Consideration of Chronic Appendicitis." Discussed by Drs. Logan Clendening, Kansas City, Mo.; Leon T. Le Wald, New York; Joseph C. Bloodgood, Baltimore; Walter C. Alvarez, San Francisco; Seale Harris, Birmingham, Ala.; Franklin W. White, Boston; R. Walter Mills, St. Louis, and John A. Lichty, Pittsburgh.

Dr. W. Howard Barber, New York, read a paper on "Enteroparesis." Discussed by Drs. Walter C. Alvarez, San Francisco; Leon T. Le Wald, New York, and W. Howard Barber, New York.

Dr. G. R. Satterlee, New York, read a paper on "The Value of Entero-Antigens in Gastro-Intestinal Disorders." Discussed by Drs. Anthony Bassler, New York, and G. R. Satterlee, New York.

Dr. Louis J. Hirschman, Detroit, read a paper on "The Value of Temporary Colostomy." Discussed by Drs. A. B. Graham, Indianapolis; Samuel G. Gant, New York; Sidney K. Simon, New Orleans; Alfred Strauss, Chicago; John L. Jelks, Memphis, Tenn.; Anthony Bassler, New York; Granville S. Hanes, Louisville, Ky., and Louis J. Hirschman, Detroit.

Dr. J. Rawson Pennington, Chicago, read a paper on "Age and Site Incidence of Carcinoma of the Rectum and Pelvic Colon." Discussed by Drs. William M. Beach, Pittsburgh; Ralph W. Jackson, Fall River, Mass.; Louis J. Hirschman, Detroit; John L. Jelks, Memphis, Tenn.; A. L. Levin, New Orleans, and J. Rawson Pennington, Chicago.

THURSDAY, MAY 25—AFTERNOON

The meeting was called to order at 2:15 by the chairman.

The following officers were elected: chairman, Dr. J. Rawson Pennington, Chicago; vice chairman, Dr. Franklin W. White, Boston; secretary, Dr. Sidney K. Simon, New Orleans; delegate, Dr. Louis J. Hirschman, Detroit; alternate, Dr. Martin E. Rehfuss, Philadelphia.

Dr. William M. Beach, Pittsburgh, presented the report of the special committee appointed to draft resolutions on the death of Dr. Murray, as follows:

Dr. Dwight Henderson Murray was born in Artman, N. Y., Aug. 31, 1861, and died suddenly in Syracuse, N. Y., Oct. 21, 1921.

1. He graduated in medicine from Syracuse University, and was professor of proctology there when he died. His influence was great and his positions were high in local, country, state and national organizations. And greatest of these was his work for ten years in the House of Delegates of the American Medical Association, which culminated in his election as its speaker, which office he held at his death.

2. Some of his work in that body was also a part of the history of this section. Undiscouraged by long opposition, he put up a long and winning fight in the House of Delegates for the most decisive recognition which proctology has ever had as a specialty. This was the organization of the Section on Gastro-Enterology and Proctology in 1917, now one of the best and most largely attended sections, and he was its first chairman.

3. Dr. Murray was a manly and militant personality, and he left his imprint on whatever he touched. He will be missed by his family, his community, his profession, and not least by this section, whose unanimous vote records this minute.

The report was adopted.

Dr. Seale Harris, Birmingham, Ala., read a paper on "Gastroptosis: A Study of Five Hundred Cases." Discussed by Drs. John Bryant, Boston; A. L. Levin, New Orleans; Anthony Bassler, New York; Leon T. Le Wald, New York; John L. Jelks, Memphis, Tenn.; Charles D. Aaron, Detroit; G. R. Satterlee, New York, and Seale Harris, Birmingham.

Dr. Walter C. Alvarez, San Francisco, read a paper on "New Methods of Studying Gastro-Intestinal Peristalsis." Discussed by Drs. A. J. Carlson, Chicago; Sidney Strauss, Chicago, and Walter C. Alvarez, San Francisco.

Dr. E. H. Gaither, Baltimore, read a paper on "The Value and Limitations of Roentgen-Ray Diagnosis in Digestive Diseases." Discussed by Drs. R. Walter Mills, St. Louis; Franklin W. White, Boston; Leon T. Le Wald, New York; T. R. Brown, Baltimore; E. H. Kessler, St. Louis; Sidney A. Portis, Chicago, and E. H. Gaither, Baltimore.

Dr. Joseph Sailer, Philadelphia, read a paper on "Achylia Gastrica." Discussed by Drs. Frank Smithies, Chicago; Seale Harris, Birmingham, Ala.; A. L. Levin, New Orleans; Arno B. Luckhardt, Chicago; H. W. Soper, St. Louis; A. J. Carlson, Chicago, and Joseph Sailer, Philadelphia.

Dr. Charles D. Aaron, Detroit, read a paper on "Nonsurgical Quadrant Treatment of Internal Hemorrhoids and Prolapse of the Rectum." Discussed by Drs. William H. Stauffer, St. Louis; Ralph W. Jackson, Fall River, Mass.; Collier F. Martin, Philadelphia; A. B. Graham, Indianapolis; E. V. Dickey, Dallas, Texas; J. Rawson Pennington, Chicago, and Charles D. Aaron, Detroit.

Dr. Collier F. Martin, Philadelphia, read a paper on "A Suggested Classification for Anorectal Prolapse." Discussed by Drs. Granville S. Hanes, Louisville; William H. Stauffer, St. Louis, and Collier F. Martin, Philadelphia.

FRIDAY, MAY 26—MORNING

A joint meeting was held with the Section on Surgery, General and Abdominal. For a report of the proceedings, see the minutes of that section.

SECTION ON MISCELLANEOUS TOPICS

MEETING ON ANESTHESIA

WEDNESDAY, MAY 24—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Isabella C. Herb, Chicago.

Dr. J. M. Rector, Jersey City, N. J., read a paper on "Synergistic Analgesia: Clinical Observations." Discussed by Drs. J. T. Gwathmey, New York City; Thomas J. Collier, Atlanta, Ga.; Ansel M. Caine, New Orleans; Harry Jackson, Chicago; J. L. Corbin, Minneapolis, and J. M. Rector, Jersey City, N. J.

Dr. Isabella C. Herb, Chicago, read the chairman's address, entitled "Postoperative Lung Complications."

Dr. Cline N. Chipman, Washington D. C., read a paper on "Relation of the Anesthetic to Pulmonary Abscess Following Nose and Throat Surgery." Discussed by Drs. A. H. Miller, Providence, R. I.; R. Stuart Adams, San Antonio, Texas; Frances E. Haines, Chicago; Edwin McGinnis, Chicago; Logan Clendening, Kansas City, Mo.; I. E. McKesson, Toledo, Ohio, and Cline N. Chipman, Washington, D. C.

Dr. Harry T. Jackson, Chicago, read a paper on "Clinical and Experimental Studies on the Cerebrospinal Tension in Relation to Surgical and Anesthetic Risk." Discussed by Drs. E. I. McKesson, Toledo, Ohio; F. H. McMechan, Avon Lake, Ohio, and Harry T. Jackson, Chicago.

Dr. J. F. Corbett, Minneapolis, read a paper on "An Experimental Study of the Epinephrin Content of the Suprarenal Gland Under Anesthesia and in Shock." Discussed by Drs. Nettie Klein, Texarkana, Texas; Ansel M. Caine, New Orleans, and J. F. Corbett, Minneapolis.

Dr. W. E. Burge, Urbana, Ill., read a paper on "The Effects of the Repeated Administration of Anesthetics on Blood Catalase." Discussed by Drs. Morris H. Clark, Kansas City, Mo.; F. H. McMechan, Avon Lake, Ohio, and W. E. Burge, Urbana, Ill.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 10, 1922

THE INCIDENCE OF CANCER

"The imagination of the race," says a popular writer, "has ever endowed cancer with a peculiar individuality of its own. Although it has vaguely personified in darkest ages other diseases like the Plague, the Pestilence and Maya (the small pox) these have rapidly faded away in even the earliest light of civilization, and have never approached in concreteness and definiteness the malevolent personality of Cancer." [1] And today there is being added to the horror of the disease and the mystery of its genesis the widespread reputation that cancer is heavily on the increase in all civilized countries.[2]

The statistics of the United States registration area show a continuous increase in the reported cancer deaths, as do similar statistics in other countries. On this fact has been based a widespread belief that cancer is a growing menace, which has become an integral and disquieting part of the layman's knowledge of cancer. That this increase in the number of reported deaths from cancer does not necessarily mean an increase in the actual amount of human cancer has been pointed out frequently enough, but qualifying statements notoriously make less impression than unqualified conclusions. Five years ago, Willcox [3] analyzed the statistical data on which has been based the belief that cancer is increasing, and concluded that the evidence did not establish this conclusion. He called attention to the fact that a large part of the alleged increase was produced by the inclusion of more cases because of more accurate diagnosis; for when the statistics were so kept as to permit of analysis it was found that the increase was entirely in cancer in inaccessible parts of the body, whereas in the same population there is no increase in the number of cancers superficially located, so that their diagnosis could be made as accurately years ago as now. The increasing average age of the population in any community of necessity carries with it an increased cancer rate, as also does more accuracy in reporting deaths, especially the elimination of old age as a cause of death. Hence we find the cancer death rate highest in the most advanced communities, and lowest in the most backward, not because "cancer is a disease of civilization," but simply because in the former localities the statistics come nearer reflecting the actual facts. As an illustration of the influence of improved diagnosis on the mortality statistics may be cited the fact that, between 1900 and 1915, the reported appendicitis mortality showed an increase of 40 per cent., while at the same time the real rate was undoubtedly decreasing because of improved diagnosis and treatment. Increasing accuracy in diagnosis works only in one way; that is, it results in attributing to cancer many deaths which would formerly have been incorrectly attributed to some other cause, and changes but few in the other direction.

Insurance statistics are perhaps the most valuable we have in this country, for there is likely to be more care taken in giving the true cause of death when payment of insurance claims is involved. When, therefore, a competent statistician accustomed to study figures of facts without regard to tradition and unmoved by superficial guesswork applies rigid logic to premises which have been shorn of some of their obvious errors, he deserves a respectful hearing, even when "common knowledge" appears to be against him. Strong [4] has recently concluded that we cannot now determine whether the cancer mortality is slightly increasing, practically stationary, or slightly decreasing, but that we can be sure it is not greatly increasing. A more exact result is something for future investigations when reliable statistics for a long period of years are obtainable. Fair-minded students of mortality statistics have often pointed out that with the development of medical science there has ensued a gradual increase in the correctness of diagnosis, of the cause of death as well as a more complete recording of all cases of disease. The imperfections of the records of even a generation ago need not be dwelt on here. Strong reminds us that undoubtedly in the past many deaths attributed to old age should properly have been set down as cancer, and many others attributed to other causes would undoubtedly have been attributed to cancer if the correct diagnosis had been made. The result of this would be that if there were really stationary cancer mortality it would nevertheless appear to be increasing considerably because of the increasing correctness of diagnosis.

Strong has requisitioned the data from two of the largest life insurance companies secured during the years 1911 to 1921, inclusive, which may be regarded as relatively accurate in comparison with figures from other sources. The comparative novelty in his interpretation of available cancer mortality statistics lies in the

1. Hutchinson, W.: Preventable Diseases, Boston, Houghton, Mifflin Company, 1914, p. 350.
2. Fisher, Irving, and Fisk, E. L.: How to Live, New York, 1919, p. 381.
3. Willcox, W. F.: On the Alleged Increase of Cancer, J. Cancer Res. 2:267 (July) 1917.
4. Strong, W. M.: Is Cancer Mortality Increasing? J. Cancer Res. 6:251 (July) 1921.

insistence on comparing death rates for the same ages, as cancer is an older age disease. Influx or emigration of young persons would unquestionably alter the conclusions from time to time if an entire population were made the basis of deductions, as is usually done.

In view of all the tendencies that exist to cause an appearance of statistical increase of cancer mortality, the failure of careful statistical study to indicate any noteworthy increase of cancer is strong evidence that such an increase is not taking place. This conclusion, of course, does not lessen the seriousness of the cancer problem; but it should prevent fears, at present not justified, that it is an increasing menace that threatens to overwhelm the human race, as some alarmists have maintained. There will always be plenty of other means of death besides cancer.

In combating the fear of a growing menace of cancer, it has been remarked [1] that a disease for which 80 per cent. of the mortality occurs after 45 years of age is scarcely likely to threaten the continued existence of the race. Let us frankly realize, however, that meanwhile the statistics of the United States registration area show a continuous increase in cancer deaths. The hopeful confidence of a seriously minded profession supporting a host of tremendously earnest investigators in the field of cancer research may be regaled by the assurance that cancer is not gaining a greater foothold in the younger members of our population; yet the problem of the unphysiologic deaths of even the later years of life continues to loom so large and difficult that the unceasing, unrelenting, undismayed attack on it through every resource of science calls for great professional courage as well as the highest intelligence that man can mobilize.

THE TRAINING OF HOSPITAL EXECUTIVES

A committee on the training of hospital executives, appointed by the Rockefeller Foundation early in 1920, has just rendered its report; it is "an attempt to present a composite picture of the American hospital and to suggest a basis for training hospital executives." The hospital is referred to as the common ground where the patient, the community and the professional groups come in contact so that, with proper amplification and development, the hospital will help materially in the solution of many problems. Attention is called to the enormous capital—approximately $3,000,000,000—invested in the hospitals of the United States and Canada, and to the tremendous financial gain which will result from the greater efficiency which is possible if due consideration is given to the problems of administration as well as to those of location, organization and finances. The report recognizes the major function of the hospital as its service to the patient—"the cross section of human life." The hospital is "a community organization which provides facilities and personnel for rendering the highest possible grade of health service to patients, professional groups and the community; for educating the community to demand and support adequate services and sound health policies; for educating additional personnel and professional groups in technical fields and in cooperative endeavor, and for advancing our knowledge of disease and its prevention through technical research and appropriate organizations."

While the ultimate responsibility for policies and for appointments on the professional staffs rests with a governing board, the one person responsible for the conduct of the hospital is its executive—its superintendent, manager or director—the basic reason for the proposed course. The executive organizes the professional groups and other personnel in order to secure their proper functioning. Such an officer should be able to interpret community needs and the fundamentals of sound administration, as well as to be able to mobilize and direct the diversified activities of the hospital.

Specific training for the hospital executive has not heretofore been provided for, and, in fact, not even considered. The committee shows the need for the special class of trained hospital executives, and advises that his education be placed on a university basis. It recommends also that the conception of the hospital be changed; that it be looked on more as a community health center wherein the various health activities can cooperate under a central policy-determining organization. Provision will need to be made also for satisfactory compensation whereby students of the highest ability can be secured. The course of instruction outlined includes public health, 20 per cent.; social sciences, 15 per cent.; organization, 15 per cent.; hospital functions and history, 10 per cent.; business science, 10 per cent.; institutional management, 10 per cent.; personnel administration, 5 per cent.; community hospital needs, 5 per cent.; physical plant, 5 per cent., and jurisprudence, 5 per cent. Instruction in these subjects will cover a period of nine months, to be followed by four months of practical work in a hospital, and two months to be spent in visiting hospitals of different types and sizes.

The proposed training school for hospital executives should be located where the facilities, machinery and teaching personnel necessary for presenting the fundamentals of the subjects are accessible. Such material and personnel are found for the most part in well established schools of arts and sciences, business administration, medicine, nursing, public health and engineering, as well as in hospitals, dispensaries and social agencies. The training contemplates university supervision and immediate direction of an individual of adequate university caliber with the departmental staff appropriate to the proposed course of training. It is recommended that, wherever possible, courses now in existence and present personnel be utilized.

This report reveals the greater possibilities of community service which hospitals may have through the securing of thoroughly trained superintendents. The whole scheme may appear to some to be idealistic, but, it is based on a careful study of existing conditions, and an actual trial of the plan may demonstrate its practicability.

THE "OPEN DOOR" POLICY IN ANIMAL EXPERIMENTATION

About fourteen years ago, the Committee for the Protection of Medical Research of the American Medical Association began collecting facts relative to the use of animals in the laboratories of the United States. The inquiry soon disclosed that in a number of the older institutions there had existed for many years regulations prescribing humane treatment of animals before, during and, in case of continued existence, after operation. These scattered and diverse statements were gathered together, correlated, revised, and made generally applicable to different conditions. After the "rules" had thus been reformulated, the committee undertook to have them adopted by research institutions everywhere, in such manner that the director of each laboratory was made responsible for having them conspicuously posted and enforced. This was accomplished in practically all medical schools, in research institutes, in the veterinary schools where animal experimentation is carried on, and in most of the laboratories of the state boards of health. This nearly universal acceptance of a humane code of conduct in the experimental use of lower animals has placed medical research in a strong position when efforts to secure hostile legislation have been made.

A contention of the antivivisectionists, which they have repeatedly emphasized, is that animal experimentation goes on "in secret," "behind barred doors," where no one can know the "cruelties" that are being perpetrated. This charge was met in many instances by invitations to officers of humane societies to visit the laboratories at any time in order to learn the actual facts. Obviously, this attitude, if generally taken, would further strengthen the status of animal experimentation in the opinion of reasonable people; in fact, inquiry reveals that this "open door" policy has been accepted in all the medical schools except one, and in all the institutes for medical research in the United States.

Those who have opposed legislation to limit the use of animals for scientific progress have consistently contended that existing law against cruelty applies quite as much to laboratory workers as it does to any other citizens. In this view they were strongly supported by Governor Johnson of California, some years ago, when he vetoed a special measure directed against animal experimentation on the ground that the general law applied. If now there is any suspicion that animals are not humanely treated in research laboratories, the remedy is conveniently at hand. The enforcement of the rules, the adoption of the "open door" policy, and the applicability of the anticruelty laws do away with any need for any special restrictive legislation.

Current Comment

"AN APOLOGIST FOR 'PATENT MEDICINES'"

Henry C. Fuller's new book "The Story of Drugs" was discussed at some length in THE JOURNAL for May 13. Its whitewashing of the "patent medicine" business and its panegyric of the Proprietary Association (the "patent medicine" organization) led THE JOURNAL to suggest that the nostrum interests could well have afforded to put out the book at their own expense as a free gift to the public. The latest issue of the mouthpiece of the "patent medicine" interests, *Standard Remedies*, unwittingly confirms THE JOURNAL'S opinions. The magazine contains an editorial praising Fuller's book and suggesting that "it should be in the hands of every manufacturer and all of his chiefs, at least"; it opines that "anyone in the business will be fascinated with it." Elsewhere in the same issue of *Standard Remedies* appears another item of interest. In an article dealing with the recent annual meeting of the Proprietary Association, we find reference to "Dr. Henry C. Fuller of the Institute of Industrial Research" and the statement that Fuller had made a report to the "patent medicine" men when they were in session, "of his research and analytical activities on behalf of the Association." "We are advertised by our loving friends!"

A MEDICAL GARDEN

While synthetic medicaments have held the focus of medical attention during the last two decades, those which may be obtained from medicinal plants have continued to be of great utility, and many even irreplaceable. Such plant derivatives as cinchona, aconite, opium, rhubarb and senna still command a wide range of use in medical practice. For this reason the exhibit at St. Louis by the Missouri Botanical Gardens of a reproduction of the old Chelsea Physic Garden attracted a large number of the physicians who visited the annual session of the association. A recent issue of the bulletin published by this organization[1] is devoted to an historical discussion of the famous garden which was reproduced. Even in 1673, as shown by this report, it was found necessary to protect the physician and dealer in drugs against unsatisfactory and inefficacious counterfeits of valuable drug substances, and this necessity led to the establishment of the Chelsea garden. A greenhouse, heated by so-called "subterranean heat," conveyed by means of a brick flue under the conservatory, was erected in 1681, and in 1732 the garden was visited by Linnaeus, who states in his diary that he collected many plants in the garden and that he was given several dried specimens from South America. The Chelsea garden is still main-

1. Missouri Botanical Garden Bulletin **10**: 55 (April) 1922.

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tained, although now administered by the trustees of the London Parochial Charities. In the exhibit as made in St. Louis, the reproduction followed the plan of the Chelsea garden drawn by John Hayes in 1753. To complete this demonstration, the authorities of the Missouri Botanical Garden gathered in the museum building copies of old works on materia medica and other incunabula on botanic subjects of medical interest, and also provided demonstrations on the diseases of plants. The medical profession is greatly indebted to the authorities of the Missouri institution for this practical historical demonstration of botanic therapy.

SMALL DOSAGE

The comparatively great significance which very small amounts of certain substances can attain in relation to the living organism could be illustrated in many fields. There are familiar drugs used with unquestionable success in dosages as small as $\frac{1}{200}$ grain (0.0003 gm.). The entire iodin supply of the thyroid gland, on which normal physiologic behavior of a number of functions depends, amounts to only a few thousandths of a gram, so that a single milligram of thyroxin, the newly isolated active constituent of the thyroid, exerts a profound effect on the organism. This small quantity can produce a 2 per cent. increase in basal metabolism in a 70 kilogram (154 pound) man. The investigators of the vitamins are pointing out that from the quantitative standpoint these potent food factors must belong among "the infinitely little in nutrition." Snake venoms, long classed among the most toxic of poisonous substances, are fatal to adult man in doses of a few milligrams. Laboratory animals have been killed by a few thousandths of a milligram of toxalbumin from the castor bean. The minimal lethal dose of some culture filtrates containing diphtheria toxin is measured in thousandths of a cubic centimeter. However, all these figures seem enormous by comparison with the data recently secured by Bronfenbrenner and Schlesinger,[1] in the Department of Preventive Medicine and Hygiene of Harvard Medical School, in a study of the poison elaborated by *Bacillus botulinus*, the micro-organism concerned in many of the recent outbreaks of the form of food poisoning termed botulism. In a recent issue of THE JOURNAL these investigators report the minimal lethal dose of crude botulinus filtrates for mice to be 3×10^{-6} c.c. (i. e., 0.000,003 c.c.). The specific botulinus toxin is, however, capable of an extraordinary increase in potency when it encounters the condition of hydrogen ion concentration similar to that found in the stomach during active digestion. In a medium of such reaction, a minimal lethal dose of only 3×10^{-21} c.c., or 0.000,000,000,000,000,000,003 c.c., has been attained. Even when converted from mouse to human dosage by an increment of several thousand times this figure, the quantity of actual substance involved remains within the range of the infinitesimal. A teaspoonful would menace a nation. These findings represent a new order of magnitude in toxicologic research.

1. Bronfenbrenner, Jacques, and Schlesinger, M. J.: Some of the Factors Contributing to Toxicity of the Botulinus Toxin by Mouth, J. A. M. A. 78:1519 (May 20) 1922.

Association News

DATE OF 1923 SESSION

The Board of Trustees of the American Medical Association announces June 25-29, 1923, as the dates for the next Annual Session of the American Medical Association at San Francisco.

MINUTES OF THE MEETING OF THE BOARD OF TRUSTEES

Meetings of the Board of Trustees were held at the Hotel Statler, St. Louis, May 19, 1922, and adjourned meetings were held, May 20, 21, 22, 24 and 25 at the same place. All members of the Board of Trustees were present at these meetings. Dr. Hubert Work attended the called meeting, May 19; Dr. George E. de Schweinitz and the General Manager, Dr. George H. Simmons, attended all of the meetings. May 19, Drs. Vaughan, Cannon, Board, Rankin and Dr. West, the acting secretary of the Council on Health and Public Instruction, were present.

Lay Medical Magazine

The lay medical magazine was the subject of discussion by the Board and the Council on Health and Public Instruction. As a result of this conference, the following statement was formulated and incorporated in the report of the Trustees to the House of Delegates:

> At the last annual session of the Association at Boston, the House of Delegates authorized the publication of a lay medical magazine. During the year the Board has held conferences with the Council on Health and Public Instruction and with individuals in regard to the character, scope, frequency of publication, physical form and other details of importance in this undertaking. It is now able to report that it is proceeding in the establishment of a lay medical magazine, which will be publish d when the needed additional pressroom is made available on the completion of the new headquarters' building.

Annual Report of the Board of Trustees

The annual report of the Board of Trustees as presented in printed form was approved by the Board for presentation to the House of Delegates. (See THE JOURNAL, May 27, p. 1615.)

Legal Defense Indemnity in Malpractice Suits

Dr. McDavitt, chairman of the special committee of the Board, presented a report which embodied the study made by the committee of legal defense indemnity in malpractice suits. Emphasis was made of the need of cooperation between the administrative directors at headquarters of the Association and the committees on medical defense of the constituent state associations. Attention was called to the action of the Council on Health and Public Instruction in its report to the House of Delegates recommending the separation of all legislative functions from the jurisdiction of the Council. Inasmuch as the House of Delegates approved of this request of the Council on Health and Public Instruction and recommended the organization and establishment at headquarters of a Bureau on Legal Medicine and Legislation with a full-time secretary in charge, the Board empowered the Executive Committee and the General Manager to proceed at once with this undertaking.

Cooperation and Aid of the Association with Constituent State Associations in Combating Harmful Legislation

Dr. Williamson presented a request from the Executive Committee of the League for the Conservation of Health of the State of California, for aid in combating legislation inimical to the welfare of the public and detrimental to the efficient practice of medicine, the aid requested to be in the form of the publication of literature intended to educate the general public in matters relating to public health, such as that which was furnished by the Association during the 1920 election in California.

The subject of the policy which the Association should adopt in regard to furnishing aid to the constituent state

associations in matters of legislation, such as that presented by Dr. Williamson, received earnest discussion, and it was finally decided that the request for aid by California and by other states which may be received hereafter, to combat legislation derogatory to the best interests and welfare of the public, will be granted with the understanding that the details in carrying out this policy shall be under the jurisdiction of the Executive Committee and the General Manager; however, it was also the understanding that this aid shall be limited to cost of the publication of educational literature, which will be furnished within certain limitations, and that when the requested aid involves a considerable financial cost, it shall be given only upon the approval of the full Board.

American Red Cross

Dr. Phillips presented the subject of the public health activities of the American Red Cross. The subject was discussed at several of the meetings of the Board, and at the meeting held on May 25, the President, Dr. de Schweinitz, made a verbal report on the results of the conference which he had held with the representative of the American Red Cross who came to St. Louis from Washington, D. C. It was the unanimous opinion of the members of the Board that the extensive program of the American Red Cross of public health work contained certain proposed activities which are of a character which in operation would be detrimental to the best interests of the public and of the medical profession. It was finally decided that President de Schweinitz be authorized to confer and advise with the chairman of the Central Committee of the American Red Cross in regard to its public health functions.

National Medical Association

Dr. George E. de Schweinitz presented a letter from Dr. H. M. Green, president of the National Medical Association, a society of colored practitioners. This included a request for the cooperation of the American Medical Association with the National Medical Association in the promotion of standards of medical education, medical practice and the like. The President was requested to make a suitable reply.

Component Societies and Periodic Health Examinations

The request of the National Health Council, through the Council on Health and Public Instruction, that the Association cooperate in the observance of National Health Days in December, 1922, with the object of the promotion of the periodic physical examination of the sick and the well, received general discussion. It was the consensus of opinion of the members of the Board that periodic physical examination should be promoted through the component county medical societies; that such examinations should be offered to the public by the organized county society and the examination made by its own members; that in the promotion of this program the Council on Health and Public Instruction should formulate the proper standard examination forms; and finally, the Board recommended that the Council on Health and Public Instruction should present this matter to the House of Delegates for decision. [See minutes of the House of Delegates, THE JOURNAL, June 3, p. 1709.]

Executive Committee Meetings

In the discussion of the establishment of a Bureau on Legal Medicine and Legislation and the publication of a lay medical magazine, it was recognized that the administrative duties and responsibilities of the administrative personnel would be greatly increased. To meet these conditions, the Board empowered the Executive Committee to request the attendance at any monthly meeting, when special subjects are to be considered, of the President, the President-Elect, the chairman of any of the councils, and any member of the Board.

Treasurer of the Association

Dr. William A. Pusey of Chicago informed the Board that, because of other responsibilities, he was compelled to decline to act any longer as treasurer of the Association. A special committee of three was appointed to select a Fellow of the Association resident in Chicago, to be nominated by the Board for the position of treasurer. At the adjourned meeting on May 24, the committee proposed Dr. Austin A. Hayden of Chicago, and he was unanimously nominated for the position.

Invitation of Cities for the 1923 Annual Session

The Secretary of the Association presented invitations from San Francisco, Washington, Atlantic City, New York and Chicago for the consideration of the Board for the place of the annual session of 1923. The Board unanimously decided that it would present to the House of Delegates the invitation from San Francisco and from Atlantic City as desirable places for the meeting of 1923, and request the House to make a choice between the two cities.

Reorganization of the Board of Trustees

The new Board of Trustees, as constituted by the election of Drs. A. R. Mitchell, D. Chester Brown and Oscar Dowling to succeed themselves, met on May 25, and organized by the election of Dr. Oscar Dowling as chairman, Dr. D. Chester Brown, vice chairman, and Dr. Frank Billings, secretary. Chairman Dowling appointed, as members of the Executive Committee for the ensuing year, Frank Billings, chairman, A. R. Mitchell and Wendell Phillips.

Scientific Exhibit

Dr. Brown, chairman of the special committee of the Board on scientific exhibit, expressed satisfaction with the great improvement of the scientific exhibit at St. Louis, as compared with that of former years. He suggested that greater improvement may be brought about by continued vigilance and by the promotion of cooperation with the scientific sections. On motion, the special committee of the Board on scientific exhibit was reappointed, with Dr. Brown as chairman.

The Board adjourned sine die.

FRANK BILLINGS, Secretary of the Board.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. Samuel B. Hirschberg has resigned as superintendent of Mount Zion Hospital, San Francisco, effective, July 1.——Dr. Nils Roth Jeull, Santa Rosa, has been elected president of the Sonoma County Public Health Association. ——Dr. Robert A. Peers, Colfax, was elected president of the California Tuberculosis Association at the meeting recently held in Yosemite.

State Medical Meeting.—At the annual meeting of the Medical Society of the State of California, held in Yosemite Valley, May 15-18, under the presidency of Dr. John H. Graves, San Francisco, the following officers were elected for the ensuing year: president, Dr. Henry C. Brainerd, Los Angeles; president-elect, Dr. Thomas Clay Edwards, Salinas; vice presidents, Drs. Percy T. Magan, dean of the College of Medical Evangelists, Los Angeles, and William W. Cross, Jr., Fresno, and Dr. William E. Musgrave, San Francisco, was reelected secretary of the association.

CONNECTICUT

Home for Crippled Children.—Plans have been completed and work will be started in the near future on the new buildings for the Newington Home Corporation at Hartford. The legislature has provided $200,000 for the buildings. The physicians and surgeons of the city will give their services free.

DISTRICT OF COLUMBIA

New Home for Army School.—The U. S. Army Medical School, Washington, will have a new modern fireproof home in the Walter Reed General Hospital reservation within a year. The building is the initial step in the plans for a great

medical center, to include the hospital, the medical school, the Army Medical Museum and the library. The sum of $500,000 has been appropriated by Congress for this purpose. The structure has been designed in the Georgian style of architecture, to correspond with the present hospital buildings. The first unit to be erected will be the south wing, for which plans have been completed.

Head of Oriental University Arrested.—A report in the New York *Evening Sun* states that Helmuth P. Holler, head of the Oriental University of Washington, was arrested recently by the Postoffice Department, charged with violating the postal regulations, but was released on a $3,000 bond to await trial. The Oriental University has carried on an extensive business in granting diplomas and degrees, chiefly in the Orient, the remarkable thing being the ease with which students were able to obtain them. The report states that a Chinese student succeeded in obtaining a degree merely by enclosing the fee for registration. Reports regarding the irregular distribution of diplomas have at various times been received from France, Germany and Switzerland.

Smithsonian Institution to House Public Health Exhibit.—The National Committee on Exhibits Showing Advances in Sanitary Science has recently been formed in Washington, for the purpose of collecting and preparing material for a public health exhibit in the Capitol. The members of the committee include: Surg.-Gen. Hugh S. Cumming, U. S. Public Health Service, chairman; Dr. D. B. Armstrong, National Health Council; Surg.-Gen. M. W. Ireland, M. C., U. S. Army; Dr. Victor C. Vaughan, National Research Council; Dr. C. D. Walcott, Smithsonian Institution, and James A. Tobey, National Health Council, secretary. Space for the proposed exhibit has been placed at the disposal of the committee by the Smithsonian Institution, which, it is stated, is visited by more than half a million persons annually. Plans are under way to install exhibit material secured from official and voluntary health agencies. The secretary's office is in the national headquarters of the American Red Cross at Washington.

FLORIDA

Physician Shot.—Dr. John H. Cox, Sampson City, was shot through the chest and seriously injured, May 10, by a section foreman of the Georgia and Florida Railroad, who was intoxicated. Dr. Cox, who is 70 years of age, is in a serious condition.

ILLINOIS

Sanatorium Being Built.—One of the buildings of the Sunnybrook Farm Sanitarium at Ingleside, which was recently destroyed by fire, is being rebuilt, and will soon be ready for use.

Murder Charge Dropped.—It is reported that the state has dropped the case against Dr. Robert X. McCracken, East St. Louis, ex-coroner of St. Clair County, who was charged with the murder, on January 9, of Mrs. Clara Richwine and her father-in-law.

Personal.—Dr. Robert I. Law, Galesburg, was elected medical director of the Illinois department of the G. A. R. at its fifty-sixth annual encampment at Alton, May 15-20. Dr. Edward P. Bartlett, Springfield, was chosen commander of the Illinois department.

Narcotic Law Violated.—John H. Love, owner of a drug store in Johnston City; Herman Roberts, a druggist of Marion, and Richard H. Mampton, Carterville, were each fined $150 and costs, May 11, when they pleaded guilty to violation of the Harrison Narcotic Law, it is reported. The druggists, it is alleged, filled prescriptions for James Jerods, now in the penitentiary, who admitted forging the name of Dr. J. B. Miller, Carterville, to obtain the drug.

Better Baby Conference and Health Demonstration.—Arrangements have been completed for carrying out a better baby conference and public health exhibit demonstration in connection with the Trans-Mississippi Exposition and Pageant of Progress which will be held in Rock Island, from June 24 to July 4, inclusive. For this purpose, the management of the exposition has secured the use of the health educational exhibit equipment owned by the state department of public health. The latter has also agreed to furnish the professional services of a physician and nurse in connection with the organization and direction of the better baby conference.

Chicago

War Hospital Officers Meet.—Members of the staff of Evacuation Hospital No. 110 were cited for their work in Cantigney, Chateau Thierry and Meuse-Argonne, at the sixth reunion held in Chicago, May 26, at the Drake Hotel.

Loyola University Recognized.—A report from Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, states that recognition has been granted by the board to the Loyola University School of Medicine, Chicago, and that graduates of 1920 and succeeding years are eligible to take examinations held by that board.——The secretary of the Kentucky State Board of Health states that, at a recent meeting of the board, it was voted to grant recognition to the Loyola University School of Medicine.

Mental Hygiene Campaign.—At a meeting of Chicagoans at the Casino Club, May 31, under the chairmanship of Dr. Frank Billings, president of the Illinois State Medical Society, a ten-day campaign was instituted by the Illinois Society of Mental Hygiene to collect funds to be used to fight nervous and mental diseases and feeblemindedness, on the same basis as the national campaign against tuberculosis was carried on. Drs. Haven Emerson, New York; Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, and Dr. Victor V. Anderson were among the speakers.

INDIANA

Hospital News.—Sunnyside Sanatorium, Indianapolis, has started construction on three new units, one of which is a children's building for the accommodation of forty-four patients, and two units of twenty-four beds for adult patients. Within a few weeks, construction will be started on the erection of a large unit to be used exclusively for colored patients.

KENTUCKY

Son Will Succeed Dr. McCormack.—The Association of State and Provincial Health Authorities, at a meeting in Washington, D. C., recently, elected Dr. Arthur T. McCormack secretary of the state board of health, as head of the association of which his father, the late Dr. J. N. McCormack, was first president. Resolutions of regret on the death of Dr. McCormack were adopted at the meeting.

County Society Elections.—At the annual meeting of the Allen County Medical Society, Dr. Elonzo A. Whitlow was elected president, and Dr. John E. Pace, secretary-treasurer. ——The Ballard County Medical Society elected Dr. William A. Ashbrook president, and Dr. George L. Thompson, secretary-treasurer.——Dr. O. P. Nuckols was elected president of the Bell County Medical Society, recently, and Dr. John G. Foley, secretary-treasurer.——At the meeting of the Campbell-Kenton Medical Society held recently Dr. James A. Davis was elected president, and Dr. J. H. Helmstedt, secretary.

MARYLAND

Site for Nurses' Home Acquired.—Plans for the expansion of the Maryland General Hospital have been advanced by the acquisition of property to be used as a site for a nurses' home. The new building, when completed, will provide quarters for 100 nurses and will enlarge the hospital's present facilities by fifty beds.

Graduate Course Renewed.—The Washington County Medical Society has revived the graduate courses which were held annually before the war. The course this year was connected with the medical extension work of the University of Maryland. Drs. Sidney Miller, Gordon Wilson and Charles Austrian were among the instructors.

Memorial to Dr. Martin.—As a memorial to the late Dr. Frank Martin, former professor of surgery at the University of Maryland Medical School, members of the class of 1907 have voted to donate a modern operating table, with its accompanying equipment, to the University Hospital. Members of the class gathered in Baltimore, May 30, for a three day reunion in celebration of the fifteenth anniversary of their graduation.

MICHIGAN

Physician Elected Mayor.—Dr. Guy C. Conkle has been elected mayor of Boyne City.

Wayne County Medical Society.—At the annual meeting of the society held in Detroit, May 15, Dr. William M. Donald was elected president; Dr. William J. Stapleton, vice president, and Dr. Bruce C. Lockwood, secretary (reelected).

Hospital News.—The Henry Ford Hospital, Detroit, recently opened twenty-four additional private rooms, with accommodations for 144 patients. It will, from time to time, open additional units of twenty-four rooms each. When all

the wings are opened, the hospital will have a total capacity of 500 beds.——Plans have been made for a 200-bed hospital for mental cases in Michigan former service men, to be built in Ann Arbor.——Ground will be broken in the near future for a $250,000 sanatorium at the St. Joseph Hospital, which will double the capacity of the institution.

MISSOURI

State Commissioner Arrested.—Press dispatches state that Mr. Charles F. Prather, who was appointed state food and drug commissioner to succeed Dr. Edward L. Barnhouse, Ironton, was recently arrested for violation of the state prohibition law. He and his brother were charged with operating a still.

Memorial Service to Physician.—Memorial services of the late Dr. Young H. Bond, who founded the Marion-Sims College of Medicine in 1890, now the St. Louis University School of Medicine, were held at the University, May 25. The Rev. W. B. Rodgers, former president of the university, gave an address.

Personal.—Dr. Evarts A. Graham, professor of surgery, Washington University Medical School, St. Louis, has been appointed a member of a commission to investigate the dispensary system in England.——Drs. Edward I. Baird, Elmer L. Parker and John E. Musgrave have been appointed members of the board of health of Excelsior Springs.——Dr. Joseph Erlanger, professor of physiology, Washington University Medical School, has been appointed a member of the medical fellowship board of the National Research Council.

New Medical University Building.—Plans for the new medical building at the state university, Columbia, have been completed, and bids are being received. In the new addition, the curators have in mind three things: 1. To equalize laboratory space in the several fundamental branches so that all the major laboratories will accommodate as many students as are now accommodated in the largest of the laboratories, namely, the anatomical. For some time the school has been able to enroll more students in the beginning courses in anatomy than could possibly be accommodated in the courses of the second year. 2. To provide adequate space for the medical library. 3. To increase materially the space devoted to advanced and research work. All the laboratory departments will profit both in point of increased space and added facilities for the research laboratories, and a very satisfactory arrangement has been made for a new library. There will be a small journal room and a reading and stack room combined, the stack room having a capacity of 1,500 volumes. This will house only the departmental library of the school of medicine, which is made up of such reference material as is in more or less constant use by students. A small amount of space in the second floor will be used for administrative purposes and for a women's reading and rest room. While the addition to the medical building will not take care of a material increase in the enrolment in the school of medicine, it will greatly relieve the trying situation that has developed in recent years owing to overcrowding in all the laboratories.

NORTH CAROLINA

Endowment for Medical School.—It is reported that Wake Forest College School of Medicine, Wake Forest, is entitled to receive the principal of a trust fund, amounting to $1,375,000, which was created in 1892 by Jabez A. Bostwick, a director of the Standard Oil Company.

Physician Decorated by France.—Dr. Alonzo Myers, Charlotte, was decorated with the Médaille d'Honneur des Epidémies at Camp Bragg, Fayetteville, May 20, by General Pershing. This is the second medal Major Myers has received from the French government for his services during the World War.

Medical Meeting.—The first annual meeting of the Caldwell-Catawba-Lincoln County Medical Society was held at Lincolnton, May 9, under the presidency of Dr. L. A. Crowell. The following officers were elected for the ensuing year: president, Dr. Jacob H. Shuford, Hickory; vice president, Dr. M. Caroline McNairy, Lenoir, and secretary-treasurer, Dr. William P. Speas, Hickory.

OHIO

Cincinnati Academy of Medicine.—At the annual election of officers of the academy, May 22, Dr. Albert H. Freiberg, professor of orthopedic surgery at the University of Cincinnati College of Medicine, was elected president; Dr. Alexander G. Drury, treasurer, and Dr. L. Howard Schriver, secretary.

Suit Over Death of Physician.—Mrs. Rogers, Columbus, lost her suit for $250,000 damages against the H. K. Mulford Company, manufacturing chemists, charging that the death of her husband, Dr. William King Rogers, in February, 1920, resulted from septicemia following inoculation with an anti-influenza serum manufactured by this company. The serum, it was asserted, was defective. In a special finding, the jury decided for the defendants, as eighteen other persons had been treated out of the same vial with no ill effects.

PENNSYLVANIA

Philadelphia

Diphtheria Death Rate Cut.—The death rate from diphtheria in Philadelphia, in 1921, was 17 per hundred thousand, according to C. Lincoln Furbush, director of public health, who points out that in 1896 the death rate from this disease was 96 per hundred thousand. The remarkable reduction has been achieved through the distribution of antitoxin in the last twenty-five years and through other preventive measures. In order to overcome those factors which are responsible for cases not easily reached by the methods used heretofore, a Schick test method of eliminationg diphtheria has been advocated.

To Retire from University Faculty.—It is announced that Dr. John B. Deaver and Dr. John Marshall will retire from the active teaching staff of the University of Pennsylvania, July 1. The retirement of these physicians is necessitated by the age rule of the institution, which fixed the age of retirement from 65 to 68 years. Retirement of a member of the teaching staff at 68 is mandatory, and between 65 and 68, optional. Dr. Deaver is John Rhea Barton professor of surgery, while Dr. Marshall occupied the chair of chemistry and toxicology, both physicians having been associated with the University for more than forty years.

Medical Alumni Banquets.—The alumni banquets of the Jefferson and Hahnemann Medical colleges were held at the Bellevue-Stratford Hotel, June 1. For the first time in the history of either institution, members of the alumni associations of Hahnemann Medical College and Jefferson Medical College publicly exchanged wishes of "fellowship" and "good will." Col. Edward Martin, state commissioner of health, addressed the Hahnemann banquet, and Dr. Isidore Strittmatter was toastmaster at the Jefferson dinner.——The senior class of the medical department of the University of Pennsylvania held their banquet, June 2. Dr. John B. Deaver presided at the dinner. Dr. William Pepper, dean of the school, Dr. B. H. Lucke, Dr. John G. Clark and Dr. George Norris were among the speakers.

PHILIPPINE ISLANDS

Philippine Pediatrician in the United States.—Dr. José Albert, member of the superior board of health of the Philippine Islands, professor of pediatrics and chief of clinics of the University of the Philippines Medical School, is now in this country. He is a member of the Philippine Independence Commission, which will appear before President Harding and congressional committees in this connection. Dr. Albert, with his two daughters, will remain about two months in this country, visiting clinics and schools in Chicago, Baltimore, Washington and New York, and in New England.

SOUTH CAROLINA

College Dean Honored.—The degree of doctor of laws has been conferred on Dr. Robert Wilson, Jr., dean of the Medical College of the State of South Carolina, Charleston, by the regents of the college.

Hospital News.—The Charleston County Tuberculosis Association has purchased the old government remount station, near Charleston, and will use it as a temporary place to house patients with more advanced tuberculosis.

Society Reorganized.—The Marion County Medical Society was reorganized, April 11, with the following officers: president, Dr. Enoch M. Dibble, Marion; vice president, Dr. Cladius F. Bullock, Nichols, and secretary, Dr. Frank L. Martin, Mullins. The meeting was held at Mullins.

TENNESSEE

Physician Pardoned.—It is announced that Dr. William T. Puckett, Whiteside, has been pardoned by Governor Taylor. Dr. Puckett was sentenced to serve from two to ten years in

the penitentiary for voluntary manslaughter and has served since March, 1921.

Conviction for Dr. Chambers.—It is reported that Dr. C. D. Chambers, Michie, was convicted of second degree murder in the McNairy County Circuit County, May 20. Dr. Chambers was indicted for murder in the first degree for killing his cousin, Aug. 18, 1921.

Dinner to Drs. Campbell and Haase.—In recognition of the election of Dr. W. C. Campbell and Dr. Marcus Haase, of Tennessee, to the chairmanships of the Sections on Orthopedic Surgery and of Dermatology and Syphilology, respectively, the medical profession of Memphis tendered them a dinner on June 10. The medical profession of Memphis expressed itself as highly honored in receiving this recognition from the Fellows of the American Medical Association.

VIRGINIA

Permanent Diagnostic Clinics.—The Virginia Tuberculosis Association, which recently organized free diagnostic clinics throughout the state, is now arranging for a permanent organization in each county to deal with the tuberculosis problem. The association has a total of $33,000 left in the local treasuries from the proceeds of the Christmas seal sale for this purpose.

WEST VIRGINIA

Federal Mental Clinic.—A new federal clinic for the diagnosis and treatment of mentally deficient ex-service men has recently been completed at Huntington. This institution is a unit of the Huntington State Hospital, of which Dr. Lewis V. Guthrie is superintendent, and was erected at a cost of $80,000. The building will accommodate fifty patients. A new bakery has also been added to the hospital, with a capacity of 2,000 loaves daily.

WISCONSIN

Personal.—Dr. Walter C. Reineking, Statesan, resident physician at the Wisconsin State Sanatorium, has been appointed superintendent of the Rockford Municipal Sanatorium, Rockford, Ill.——Dr. Frank F. Bowman, Madison, has been appointed epidemiologist to the state board of health to succeed Dr. Isa F. Thompson, resigned.

Special Classes for the Mentally Defective.—Twenty-two cities in Wisconsin have organized classes in the public schools for mentally defective and subnormal children. These groups are organized both to secure the best possible education for these unfortunate children and to free other pupils from the drag on their work which these backward boys and girls necessitate with the same teacher handling all children. Many other cities are planning these classes.

CANADA

Western Ontario Academy of Medicine.—The final session of the academy for this year was held May 23. Dr. Hans O. Foucar, department of pediatrics, Mayo Foundation, Rochester, Minn., spoke on "Respiratory Manifestations in Lethargic Encephalitis in Children" and Dr. Wesley C. Bowers, Bellevue Hospital, New York, spoke on "Otitis Media from the Standpoint of the General Practitioner."

Public Health News.—Various methods of adulterating food formed the subject of an address delivered at a recent luncheon of the Rotary Club of London, Ont., by Dr. A. J. Slack of the London Institute of Public Health. Dr. Slack stated that a sample of milk which had been kept for more than three months in the institute at a temperature of from 78 to 98 F. persists in remaining sweet, it having been treated with formaldehyd by the milk vender.

Personal.—The University of Toronto recently offered the honorary degree of doctor of medicine to Dr. C. J. O. Hastings, medical officer of health for Toronto, Ont., in recognition of his services in the promotion of public health. The senate has also offered the honorary degree of doctor of science to Charles E. Saunders, Ph.D., dominion cerealist. ——Dr. J. H. McConnell, Toronto, has recently been appointed to the corporation of Trinity College, Toronto. Dr. McConnell succeeds the late Dr. George A. Bingham.

University News.—At the convocation of McMaster University, Toronto, held recently, honorary degrees of doctor of laws were conferred on Prof. Russell D. George, state geologist of Colorado, a former graduate, and Dr. C. L. Starr, surgeon of Toronto.——Included in the supplementary estimate of expenditures of the Province of Ontario were items of $400,000 for building purposes and $100,000 for the erection of a dining hall for women students at Toronto University. —— Queen's University, Kingston, Ont., also received a grant of $10,600.

GENERAL

Statue to Relief Worker.—A statue has been erected in Hungary to James A. Pedlow, American Red Cross commissioner in Budapest. This is the first monument to a living American to be erected in Europe.

American Relief Worker Dies.—Harold F. Blandy, New York, recently died at Ufa, Russia, of typhus, aged 32. Mr. Blandy, who served with the British Air Service during the World War, had worked eight months with the American Relief Administration in Russia.

New Medical Periodical.—The American Academy of Applied Dental Science announces the issuance of the scientific quarterly, the *Journal of Oralogy* (health dentistry), for the promotion of closer cooperation between general medicine and dentistry and the stimulation of research into their common problems.

Mid-Western Association of Anesthetists.—At the annual meeting of this association held in St. Louis, B. H. Harms, D.D.S., Omaha, was elected president; Dr. Royal S. Adams, San Antonio, Texas, and Dr. Frances E. Haines, Chicago, vice presidents, and Dr. Morris H. Clark, Kansas City, Mo., secretary-treasurer.

Anesthetists Honor Physician.—At a banquet in St. Louis, given by the American Association of Anesthetists, Dr. James Tayloe Gwathmey, New York, was presented with a silver loving cup which read: "Founder and first president of the American Association of Anesthetists. For advance in the research, practice and literature of anesthesia, 1912-1922."

Air Service Medical Association.—The annual meeting of this association was held in St. Louis, May 23, under the presidency of Brig.-Gen. H. Wilmer, Washington, D. C.; Dr. Robert A. Strong, clinical professor of pediatrics, Tulane University, New Orleans, was elected president of the association and Major Raymond F. Longacre, New York, was reelected secretary-treasurer.

Medical Library Association of America.—At the annual meeting of the association at St. Louis, May 22-23, the following officers were elected for the ensuing year: president, Dr. Charles F. Wylde, Montreal, Can.; vice president, Dr. Henry B. Jacobs, Baltimore, and secretary-treasurer, Dr. John Ruhrah, Baltimore. The next meeting of the association will be held at McGill University, Montreal, September, 1923.

Bill to Pension Women War Workers.—All women employed by the Surgeon-General of the Army and the Navy as nurses, either under contract or otherwise, and all women employed by the American Red Cross in camps, hospitals or other institutions for the treatment of soldiers, during the Spanish-American War and the Philippine Insurrection, are entitled to a pension of $20 per month under the terms of a bill introduced in the Senate by Senator Calder.

American Association of Anesthetists.—At the annual meeting of the association in St. Louis, May 22-24, the following officers were elected for the ensuing year: president, Dr. Eleanor C. Seymour, Los Angeles; vice presidents, Drs. Frank L. Richardson, Boston, and Samuel Johnston, Toronto, Canada, and secretary-treasurer, Dr. F. H. McMechan, Avon Lake, Ohio. The next meeting will be held in San Francisco, in 1923, during the first two days of the Annual Session of the American Medical Association.

Bill Appropriating Money for Care of Lepers.—A bill appropriating the sum of $650,000 to be used in the care and treatment of persons afflicted with leprosy has been presented in the Senate by Senator Ransdell of Louisiana. Authority for the expenditure of the money is given the Secretary of Treasury through the U. S. Public Health Service. It is understood that the entire sum will be expended by the Public Health Service on the equipment and improvement of the leprosarium recently taken over by the government at Carville, La., and also in the cost of transportation in bringing lepers from various parts of the country to Carville for permanent treatment. The Ransdell bill was referred to the Senate Committee on Appropriations.

Research in Sex Problems.—The National Research Council has appointed a committee to take charge of a research

program in sex problems. The purpose is to determine the status of scientific knowledge in this field, to determine what research is now in progress in this and other countries, to secure statements from physicians, educators and scientific workers as to the problems on which more data are needed, and to make a thorough survey of research facilities. An appropriation of $25,000 has been obtained to carry on this work after July 1. The committee is endeavoring to lay the foundation for a prolonged scientific inquiry. When sound physiologic bases are established, the work will be extended to include human problems. The members of the committee, according to the Social Hygiene Bulletin, June, 1922, are: Drs. R. M. Yerkes, W. B. Cannon, E. G. Conklin, K. B. Davis, T. W. Salmon and V. C. Vaughan.

Gift of Insurance Library.—The Prudential Insurance Company has made an unconditional gift of the public health, medical and scientific sections of its library to the Library of the Surgeon-General's Office, U. S. Army, Washington. This collection of books, documents and data is estimated to represent about 90 per cent. of the entire public health material of the civilized world, representing, approximately, between 50,000 and 100,000 volumes and publications. The books will be transferred gradually to Washington, for reinstallation on the main floor of the Surgeon-General's Library, where a large section is being cleared for the purpose, to be hereafter known as the statistical division. The library includes countless reprints, articles and clippings on medical and related subjects, brought together during the last thirty years by Dr. Frederick L. Hoffman, the Prudential statistician. The books are down to date; but, as far as practicable, the series of official reports is historically complete. The library should prove of immense value to students of problems of medicine and vital statistics, being arranged on the subject index plan, and readily accessible, while all possible facilities will be extended by the Surgeon-General's Library to students in search of information generally out of reach. It is hoped that the installation can be completed by the first of next year and that sufficient clerical assistance will be provided by Congress to secure not only the continuity of the reports, but also the purchase of the requisite accessions and the technical assistance in special mortality research. The gift has been approved by the Surgeon-General of the U. S. Army, Major Gen. M. W. Ireland, and the Secretary of War, John W. Weeks.

Bequests and Donations.—The following bequests and donations have recently been announced:

Methodist Episcopal Old People's Home, Chicago, $130,000, for a new hall, by the will of Mrs. G. F. Swift.

Association for the Aid of Crippled Children, New York City, $60,000, derived from public subscriptions at an open air fete.

Passavant Hospital, Pittsburgh, $50,000, by the will of Henry Alexander Laughlin, formerly of Pittsburgh.

Beth David Hospital, New York City, $40,000, from gifts received at the dedication ceremony.

St. Mary's Free Hospital for Children, New York City, $25,000 by the will of Mrs. Florence Lydig Sturgis.

Mercy Hospital, Philadelphia, the bulk of an estate valued at $6,750, for a free bed in memory of his mother, Martha West, by the late Josephus West.

Hospital for Diseases of the Chest and the Kensington Hospital for Women, Philadelphia, each $5,000, by the will of John E. Baird, who died recently in Honolulu.

Seaside Home for Invalid Children, Atlantic City, N. J., $5,000, by the will of Mary H. Jones.

Samaritan Hospital, Philadelphia, $1,200, collected by a crippled employee.

St. Joachim's Hospital, Watertown, $500, and St. Elizabeth's Hospital, Utica, N. Y., $1,000, by the will of Dr. Laurentine Rouchel.

Bethel Memorial Hospital, New York, $1,000 and the residue of her estate, under the will of Mrs. Mary E. P. King.

Methodist Home for the Aged, Philadelphia, and the Asbury Park (N. J.) Hospital, each $100, by the will of Margaret P. Field.

For a national tuberculosis hospital at Colorado Springs, Colo., a 21-acre site has been donated.

For a home for children suffering from heart disease, a large estate at White Plains has been donated by Martin and Arthur Zinn, as a memorial to Mrs. Mary Zinn. The home is under the supervision of a medical board.

University of South Dakota, a large and valuable medical library, consisting of 1,400 volumes, by the will of Dr. Frederick A. Spafford of Flanderau.

Marine Hospital, San Francisco, an amphitheater, by the Knights of Columbus.

LATIN AMERICA

Argentine Campaign Against Quacks.—The new Argentine criminal code which has been enforced since May 1, provides a penalty of from fifteen days to one year imprisonment for persons practicing medicine without proper training and license.

Personal.—A banquet has been tendered Dr. Carlos Lagos Garcia by the medical force of the Hospital de Niños at Buenos Aires, of which he is the surgeon. His work, "Las Deformidades de la Sexualidad Humana," was awarded a medal and prize at the recent centennial celebration of the Academia de Medicina, as mentioned on page 1731. It is proposed to present him with a gold medal at the banquet.

Mexican Publications on Yellow Fever.—The Public Health Department of Mexico has published recently two popular pamphlets for use in its campaign against yellow fever. One contains instructions as to how yellow fever may be prevented and the other is on the rôle of *Chara foetida*, an alga, in preventing the development of the mosquito larva. ——According to a recent statement, so far there have been only five cases of yellow fever in Mexico during the present year.

FOREIGN

Cancer Research Institute in Netherlands India.—The *Nederlandsch Tijdschrift* relates that plans are under way for the cancer institute at Bandoeng, made possible by the Zuur legacy. It is to be connected with the already established hospital and medical laboratory.

Ophthalmological Society of the United Kingdom.—At the annual convention of this society held in London, May 11, the following officers were elected: president, Dr. A. Maitland Ramsay; vice presidents, Drs. J. H. Fisher, Sir John Parsons, Harold Grimsdale and Cyril Walker; secretaries, Drs. J. F. Cunningham and R. Foster Moore, and treasurer, Sir Arnold Lawson.

Reciprocity Proposed Between Spain and Germany.—The *Medicina Ibera* relates without comment that the German ambassador at Madrid has informed the Spanish government that conditions regulating the admission of foreign students to German universities have been modified recently. The applicant will be admitted, provided the university which he selects has room for him, and provided the country from which the student comes concedes the same privilege to students from Germany.

University Representatives Meet.—At a conference held in London, May 13, by representatives of the universities of the United Kingdom the following subjects were discussed: (1) the urgent need for the provision of enlarged opportunities for advanced study and research; (2) the increase of residential accommodation for undergraduate and other students; (3) specialization in certain subjects of study by certain universities, and (4) the organization of adult education as an integral part of the work of the universities.

Medical Newspaper.—A new departure has been made in Madrid, Spain, with the publication of *La Voz Médica*, a journal which in its makeup and treatment of subjects follows newspaper style. The second number is practically all devoted to different phases of Cajal's genius, most of the articles being by prominent lay writers. A cartoon of Cajal and an autograph appear on the center of the front page. The subscription price is five pesetas. The editor is Dr. A. del Busto, and the office address is Caracas 13, Madrid.

Cajal's Retirement.—Having reached the age limit, 70 years, on May 1, Prof. Ramón y Cajal was retired from his connection with the chair of histology and pathologic anatomy at the University of Madrid. Spain and Latin America are taking the lead in organizing a tribute to him, and among the early features of this is the Cajal number of the *Archivos de Medicina* of Madrid, which gives the complete list of his works. It fills eleven pages, a total of 247 articles and books, the first, his "Manual of Histology," dating from 1889. The *Siglo Médico* opened a subscription in honor of Cajal, and is publishing some of the letters that accompany the subscriptions.

Personal.—Prof. L. Michaelis of Berlin has been invited to lecture on physiologic chemistry at the Japanese University of Nagoya, and the Berlin University has given him a year's leave of absence for the purpose.——Professor Nonne of Hamburg has been asked to deliver a course of lectures at the University of Buenos Aires.——The *Münchener medizinische Wochenschrift* states that Privatdozent Capelle has accepted a call to the chair of surgery in the medical school at Asunción, Paraguay.——The *Liége Médical* reports that Professor Depage of Brussels, chief of the Hôpital de l'Océan during the war, has been appointed president of the League of Red Cross Societies.

International Bibliography on Industrial Hygiene.—The hygiene department of the International Labor Bureau proposes to organize a bibliography of all publications on occupational diseases and vocational hygiene. The International Labor Bureau consequently is appealing to all persons who are publishing articles on industrial and social medicine to send

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them a bibliographic reference of their work (name of writer, title of work, name, volume, page and date of the publication in which the work appeared), or better yet, send a reprint. The address is Hygiene Department, International Labor Bureau, Geneva, Switzerland. The bureau agrees to send its bibliography on industrial hygiene to all the collaborators.

Echegaray Prize to Cajal.—The Academy of Sciences at Madrid recently presented the prize founded in 1905 in memory of Echegaray to Ramón y Cajal. This prize is triennial, and the previous recipients have been Saavedra, the Prince of Monaco, Arrhenius and Torres Quevedo. The *Siglo Médico*, in commenting on the ceremony, quotes from Cajal's "Memories of My Life" that, in 1895, one of the members of the Academy of Sciences happened to visit Berlin, and Virchow asked him, "What is Cajal doing now? Is he continuing his interesting discoveries?"—the first time that the member had heard of Cajal. When he returned to Spain he was instrumental in having Cajal brought into the academy, so that, as Cajal says, "I had the singular privilege of having been nominated for membership in the Spanish Academy by Virchow."

Deaths in Other Countries

Dr. **James Middlemass,** lecturer in psychologic medicine at the College of Medicine, Newcastle, May 2, aged 59.——Dr. **C. Somerton Clark,** who served twenty years with the Punjab Mission of the Church Missionary Society in India, from splenic leukemia, in England, April 6.——**Sir Henry Davy,** formerly president of the Exeter Branch of the British Medical Association.——Dr. **Gustav Hamel,** in London.——Dr. **G. Falk,** a dermatologist of Munich.——Dr. **I. Rosanes,** chief of the surgical department of the Stephanie-Spital at Vienna for thirty-six years.——Dr. **Juan Azúa y Suárez,** professor of dermatology and syphilis at the University of Madrid, and a frequent contributor to the literature on these subjects. ——Dr. **S. G. Vinaj,** professor of physical therapeutics at the University of Turin and author of numerous works on massage, hydrology, etc.——Dr. **M. Zacharias de Alvarenga** of S. Paulo, Brazil.——Dr. **G. De Vecchi,** hospital inspector at Milan, aged 67.——Dr. **C. V. Ditlevsen,** a Danish physician, who made a special study of dermatology in the Danish West Indies and the Congo.——Dr. **João Moniz Barreto de Aragão,** lieutenant-colonel in the Brazilian army.

CORRECTION

Dedication of Hospital.—In THE JOURNAL, May 27, page 1649, it was stated that the dedication ceremony of the Beth Israel Hospital was held May 14. This should have read Beth David Hospital.

Government Services

Army Appropriation Bill Passes Senate

The Army appropriation bill, reaching a total of $341,750,000, has passed the Senate in the record time of six hours, and is now in the hands of conferees from both houses for a final agreement on the various amendments. The bill as changed by the Senate provides for an army of 133,000 men and 12,530 officers. Additional appropriations were made by the Senate for expense of camps of instruction for the National Guard, the sum being increased from $3,000,000 to $9,500,000. The money for civilian military training camps is fixed at $1,800,000. An increase from $2,700,000 to $3,600,000 was accorded the members of the Officers' Reserve Corps for summer training purposes, and the appropriation for pay of reserve officers, called to active duty, was increased from $250,000 to $2,000,000. The measure as it finally passed the Senate provided for the reduction of the commissioned officers in the army now fixed at 17,000 to 12,530 through the medium of a plucking board of five general officers, who shall select the officers to be either retired or discharged from the army so as to bring the total down to 12,530 within five months from the date of passage of the act. According to information secured at the office of the Surgeon-General of the Army, this wholesale reduction of officers will not affect the Medical Corps to any considerable extent. The increase in the appropriations for summer training camps and for the Officers' Reserve Corps, if finally adopted, will also assure the holding of the regular summer training camps for medical reserve officers and members of the Medical Officers' Reserve Corps units in medical colleges of the country at Carlisle Barracks.

Foreign Letters

LONDON

(From Our Regular Correspondent)

London, May 15, 1922.

A Bread Bill

Before the war, a press campaign was carried on in favor of bread made from what was called "standard flour" (flour which contained the germ and pericarp of the wheat, unlike the ordinary white flour which was then used almost exclusively). Bakers, much against their will, produced what were called "standard loaves," which were not white, like ordinary bread, but of a darkish color. The appearance of these loaves was not so inviting as that of the white loaf, and the idea got about that the dark color was due to the addition of dirt and sweepings of the shop to the white flour. In spite of the campaign in which it was shown that standard bread was much superior as an article of diet, standard bread soon disappeared from the bakers' shops.

Some members of Parliament, among them Dr. Nathan Raw, have now introduced a bill to regulate the composition of flour milled as standard flour and of bread sold as standard bread. The object is to enable the public to know whether bread offered for sale contains the component parts of the wheat grain which are essential to nutrition, and "to encourage as far as possible the milling of wheaten flour and wheaten meal, and the consumption of wheaten bread in which such important parts are included. Medical research on vitamins is a new factor in support of the use of whole meal flour, especially for children. Yet, at the present time, only a small proportion of the bread sold contains the germ and other important nutritive elements in the wheat grain. The promoters of the bill assert that when such bread is the principal element in the diet of children, it is productive of debility, and development is arrested. The important clauses of the bill are as follows:

> Standard quality wheaten flour shall be made only from well-cleaned wheat, shall be straight-run, and shall contain the whole of the flour extractable from the wheat, with a quantity of the germ amounting to at least 1 per cent. of the total weight. Standard quality wheaten meal shall be made only from well-cleaned wheat, and shall contain the whole of the component parts of the wheat grain, excluding only such portion of the bran as will not pass through a fine wire sieve of 324 meshes to the square inch, with a quantity of the wheat germ amounting to at least three-fourths of 1 per cent. of the total weight. Standard quality wheaten bread shall be made either from standard quality wheaten flour or from standard quality wheaten meal, as described above.

Sir Thomas Browne: An Anthropological Study

Sir Arthur Keith, who has recently examined the skull of Sir Thomas Browne and also the extant portraits of him, discusses in a letter to the *Times* his racial origin. He was born in London in 1605. For several generations, his mother's people lived in Middlesex and Sussex. His father came from Cheshire, where his ancestors had held land for four generations at least, and from what we know of the population of that part of England, may well have been of the pre-Saxon or Welsh stock. Sir Arthur Keith thinks that he derived his chief bodily characteristics from his father's side. His complexion was dark, his hair dark brown. These features are more common in Wales than in any other part of Great Britain. His head was dolichocephalic, measuring 196 by 146 mm. (cranial index 74.5). A greater portion of the length of the head lay behind the auditory meatus than in front of them; whereas, in most persons today, it lies in front. His growing brain must have expanded backward much more than is common. As a result, the roof of his skull is low pitched, its highest point rising only 113 mm. above

the auditory meatus. The forehead, therefore, was receding. A head of low pitch is common in Britain, particularly among the natives of the western counties. His face was rather wide in proportion to its length. His nose was narrow and long, its width in the skull being only 22 mm. and its length 53 mm. His lower jaw showed medium chin development; the distance between the angles was above the average—99 mm.

This type of face, and particularly the long narrow nose, is commonest among the natives of western Britain and again indicates a pre-Saxon lineage for the wise and mystic theological physician of Norwich. A point which Keith does not refer to is how frequently a non-Saxon strain can be traced in great English writers. A cast taken from the skull is of great interest. It shows that the temporal lobes are particularly well developed. This is in keeping with Browne's preeminent command of words and aptitude for languages, as well as his fondness for music. Such studies as this, Keith thinks, form the background of true biography. He hopes that physicians may win the sympathy of great minds in their desire to elucidate the nature of English genius by doing for them what he is certain Browne would have done for himself.

The "Journal of Scientific Instruments"

Under the title the *Journal of Scientific Instruments*, a new journal has appeared. It is issued by the Institute of Physics, because of the need of a journal dealing with methods of measurement and the construction and use of instruments. In Germany, there are four or five journals which cover this field, and one, which devotes itself entirely to scientific instruments, has been of great influence in emphasizing the importance of scientific methods in the study of technical and industrial problems. Research workers and manufacturers in this country have long felt the need of such a journal; for, although descriptions of instruments and methods of measurement are published in the specialized journals and in the transactions of societies, emphasis is not, as a rule, laid on the construction of the instruments, nor are detailed drawings generally reproduced. Still less is there an indication of possible applications of an instrument or method in a field other than that for which it was originally devised. The new journal is managed by a committee appointed by the Institute of Physics, on which the Department of Scientific and Industrial Research and the National Physical Laboratory were represented. A preliminary number of the journal has been published.

In a foreword, Sir J. J. Thomson, F.R.S., president of the Institute of Physics, points out that there is no publication in the English language which covers the ground of the journal. Descriptions of instruments and methods of measurement are given in journals devoted to particular branches of science; but, results being of primary importance, little space can be afforded to descriptions and detailed drawings of instruments. Instrumental methods are frequently valuable for researches of quite a different character from that for which they were developed, and workers who may be interested in apparatus as distinct from results may never see the publication in question, even if they know of its existence. The expenses of the journal will be considerable, as a high standard must be maintained; and it is doubtful whether receipts will cover expenditure, at any rate to begin with. Neither the Institute of Physics nor the Department of Scientific and Industrial Research has funds available to meet a deficit. Steps are being taken to raise a guarantee fund for the purpose. Before deciding to publish the journal, some indication as to its probable circulation will be necessary, and readers of the preliminary number are asked to signify their intention to subscribe.

It is proposed to issue the journal monthly, at the price of 2s. 6d. (about 60 cents). The annual subscription will be $7.50. It is estimated that with a circulation of 1,000, there will be a deficit of $10,000 per annum, and that a circulation of 3,000 will render the journal self-supporting. The preliminary number contains 36 pages of reading matter. The titles of a few of the articles will indicate the scope: "Instruments and Apparatus in Relation to Progress in Physiology," by A. V. Hill, F.R.S.; "The Use of a Reference Plate for Micrometric Measurement of Astronomical Photographs," by Sir Frank Dyson, F.R.S. (Astronomer Royal); "Two Machines for Rapidly Weighing Loads of a Few Milligrammes"; "The Measurement of the Internal Diameters of Transparent Tubes", and "The Production of Uniform Cylinders of Small Diameter."

The Smoke Evil

The Minister of Health has arranged for the appointment of one or more competent advisers to assist local authorities and manufacturers in combating the smoke evil. Legislation in regard to abatement of the smoke nuisance dates back as far as 1875; but it is so inadequate that the health authorities of the large cities have had to apply to Parliament for special powers to deal with the matter. Manufacturers are taking an increased interest in it and are learning that black smoke shows bad management and waste. But, in the domestic consumption of coal, there is little improvement. The old-fashioned smoke producing grate still keeps its place. However, the more general adoption of gas heating has led to some improvement, especially in London, where the asyphyxiating November fogs of former years have been replaced by something much milder.

The Cocain Habit

For some time addiction to cocain has been a prevalent vice. The death of an actress, after an orgy in which the drug played a part, first drew public attention to the extent of the vice. The sale of cocain, except for medicinal purposes, has been made penal, but this has not stopped traffic in the drug. Sale through pharmacists is, of course, controlled, but the drug is brought into the country from abroad by sailors and other persons, and secretly disposed of. Speaking at a dinner of the Pharmaceutical Society, the Home Secretary, after thanking the society for the help it had given in the administration of the Dangerous Drugs Act, pointed out how difficult it was for the police to detect the importation of drugs, such as cocain, while unregulated and unrestricted production was allowed in other countries. We must look to international agreements for restriction of production. The suggestion has also been made that cocain addicts should be prosecuted with the same rigor as the agents from whom they obtain their supplies. Under the existing law, they, of course, are prosecuted when found in the possession of the drug. In one case, a young man was sent to jail for six months. He felt that the sentence was very hard, but on his release he was grateful, for the enforced abstention from the drug had cured him of the habit.

PARIS

(From Our Regular Correspondent)

May 19, 1922.

International Intellectual Cooperation

Monsieur Léon Bourgeois submitted a report recently to the League of Nations, concerning questions on international intellectual cooperation. At the suggestion of the French government it was decided, at the second meeting of the League, to refer this matter to the council of the League, and eleven members were appointed on a commission which should include twelve members, the last seat being reserved for an American scientist. The commission at the present time is

composed of the following members: Professor Banerjee, University of Calcutta; Prof. Henri Bergson, College of France; Miss Bonnevie, University of Christiania; Professor de Castro, University of Rio de Janeiro; Mme. Curie, University of Paris and University of Warsaw; J. Destrée, Royal Academy of Belgium; Professor Einstein, University of Berlin; Prof. G. A. Murray, Oxford University; Professor de Reynold, University of Berne; Professor Ruffini, University of Turin, and Prof. de Torre-Suevedo, University of Madrid. While the council left the members of the commission free to plan their own program, it is expected that it will include a consideration of the three following topics: (1) possibilities of encouraging and improving the organization of scientific research by means of congresses, commissions and institutes; (2) the international relations between universities, and means for the organization of an international bureau of universities, and possibly an international university; (3) international organization of scientific bibliography, and exchange of scientific publications.

Inauguration of the Florence Nightingale School

The inauguration of the Florence Nightingale School took place recently at Talence, near Bordeaux. During the ceremony, a message from Hon. Myron T. Herrick was read by Mr. Jaekel, United States consul at Bordeaux. The general secretary of the prefecture, the general commanding the eighteenth army corps, the mayor of Bordeaux, notables in the medical world, and the president and members of the administrative committee of the Protestant Sanatorium were present at the inauguration of the school, which is annexed to the Protestant Sanatorium of Bordeaux. It was founded in memory of American nurses, nearly three hundred in number, who died on the French front during the war.

The Practice of Medicine by Students

The law of Nov. 30, 1892, concerning the practice of medicine has been modified. This modification concerns interns (they are not as a rule doctors of medicine) and medical students. Article 6 of the old law read:

> Interns of hospitals and asylums appointed after examination and having twelve credits (which means three years of medical study), and medical students having finished their course can be authorized to practice medicine during an epidemic or to replace physicians.

This article has been modified as follows:

> Interns of hospitals and asylums appointed after examination and having sixteen credits (corresponding to four years of medical study), and medical students having finished their course and consequently having twenty credits (five years of study) can be authorized to practice medicine in case of epidemic or to replace physicians.

As in the past, this authorization is given by the prefect of the department and is limited to three months; it is renewable under the same conditions. However, students who are still under the old law of four years of study (sixteen credits), can obtain the authorization as formerly, when they get their sixteen credits, or at least twelve, if they are interns.

Monument Erected to Lucas-Championnière

The unveiling of the monument erected to the memory of Lucas-Championnière, who died about ten years ago, was held, May 14, in the courtyard of the Hôtel-Dieu. He introduced in France antiseptic methods in modern surgery. The ceremony was presided over by the minister of hygiene. Speeches were made by Prof. Simpson Hendley, of London, Professor Depage, of Brussels, Professor Hartmann, in the name of the Academy of Medicine and the Hôtel-Dieu, and by Dr. Bazy, for the Academy of Science. They spoke about the fight of Lucas-Championnière in favor of antisepsis, and of his pioneer work in the resection of the knee, preventive trephination, the treatment of fractures by massage and early mobilization, the radical cure of hernia, etc. The monument is the work of the sculptor Paul Richer.

BERLIN

(From Our Regular Correspondent)

May 10, 1922.

Congress of German Surgical Association

In April, the Deutsche Gesellschaft für Chirurgie celebrated its semicentennial, presided over by Dr. Hildebrand, head professor of surgery in the University of Berlin. The first surgical congress was opened by B. von Langenbeck in April, 1872. In his opening address, Hildebrand referred to the great progress that surgery has made in the last fifty years. This forward movement is due, first, to the advances in pathologic anatomy, and secondly, to the development of diagnostic methods. Furthermore, the new teaching in regard to the interdependence of the organs and their products, and the doctrines of internal secretion and constitutional pathology have undermined the localistic conception of disease.

On the first day of the congress, the problem of general surgical infection and its treatment was discussed, chiefly by Lexer and Eden; Neufeld, director of the Berlin Institute for Infectious Diseases, and Klapp. Lexer distinguishes, in general surgical infection, two principal groups: bacterial infection and general toxic infection. These two forms of infection overlap, to a certain extent, but the distinction is a practical one. Then there are mixed types of the first and second groups, which were in the past referred to as septicopyemia. Fever is not necessarily the expression of a general infection but may be of a toxic nature (resorption fever). Changes in the clinical picture will establish the diagnosis. Demonstration of bacteria in the blood furnishes the final proof; the absence of bacteria points to the toxic type. If there are bacteria in the blood and the number is increasing, it is of little importance whether the augmentation takes place in the blood or whether new bacteria are being continually thrown into the blood stream from an outside focus. Lexer thinks that the active increase of bacteria in the blood is an established fact. It is worthy of note that the severest acute types of bacterial general infection may persist for some time without developing metastases. However, metastatic types are often less dangerous. There is a certain relationship between metastases and resorption fever —the resorption of bacteria.

General toxic infection may be divided into infection from animal toxins, infection from bacterial toxins and infection from so-called tissue toxins. An example of the first group is snake venom; of the second, tetanus, and of the third, the toxins associated with burns. A separation of bacterial toxins and tissue toxins is important. There are also transitional forms. Not all pathologic manifestations are traceable to bacterial toxins.

In this connection, a number of questions arise that still await solution; for example, whether the tissue toxins alone play an important rôle and to what extent they break down the defense measures of the organism. They often act after the manner of foreign protein, producing fatigue phenomena and similar manifestations. Injection of tissue toxins into animals causes local signs of inflammation. These phenomena often take on the form of anaphylactic symptoms. Possibly we have here an explanation of the vasotonic effect brought about by the parenteral administration of proteins. Also the action of shock may possibly often be explained by intoxication through decomposition products (toxinemia traumatica). In any event, a separation of the tissue and bacterial toxins must always be sought.

According to the statements of Eden with regard to inflammatory processes and wound infection from the standpoint of physical chemistry, the organism endeavors to counteract disturbances by sending to the part affected an increased supply of blood. Thus, hyperemia may bring about an adjust-

ment in the inflamed area in which the physicochemical disturbances (for instance, in the form of an increased hydrogen-ion concentration and an augmented osmotic pressure) find expression. Therefore, we should not, in such cases, use substances intended to combat hyperemia—not even though they be bactericidal. The preservation of nerve conduction is important in connection with hyperemia, as is shown in roentgenograms depicting the healing of artificial fractures with and without severance of the sciatic nerve. If the nerve is not severed, there is hyperemia, and callus appears by the end of two weeks; otherwise, not until a much later period. We should employ substances that attract leukocytes instead of repelling them, as we need the leukocytes to heal the wounds. In this connection, the influence of electrolytes, through the rearrangement of ions, and also the conditions of osmotic pressure play an important part. In an acutely inflamed area; in the presence of marked hypertonia, edemas and impeded influx of blood, we must not employ such substances as increase the pressure of the tissue proteins due to the absorption of moisture; which accentuate metabolism, or bar the road for the elimination of injurious metabolism products, even though such a substance may exert a bactericidal action; otherwise, an incision will be required to relieve the tension and save the tissues.

In the case of chronic inflammations, on the other hand, an accentuation of the inflammatory processes will bring about an adjustment of the disturbances and lead to a cure. Physicochemical processes also exert a decisive influence in the destruction of bacteria and in the formation of toxins. Only with the possession of an exact knowledge of these processes and their bearing on the healing process in wounds will it be possible to discover a clinically useful disinfectant; and it must be borne in mind that the processes to be noted in a fresh wound are different from those in an inflamed wound, and that these, in turn, differ from the reactions in the test tube.

The Experimental Basis of Chemical Antisepsis

Neufeld emphasized that in recent years a transition from strict asepsis to antisepsis had taken place. A number of new substances have been brought forth. The main thing is to test these new substances by animal experimentation. It is not so much a question whether they destroy at once the spores of bacteria as it is whether they destroy the toxins and inhibit further bacterial growth. An endeavor must be made to find substances that act on anaerobes and streptococci at one and the same time.

Klapp discussed deep antisepsis. The old form of antisepsis was accomplished by destruction of the tissues. There was no great difference between antisepsis and corrosion. Surgical solution of chlorinated soda exerted its effect in the same manner. There is no antiseptic that leaves the tissues entirely intact.

Marriages

CHARLES E. PROSHEK, New Prague, Minn., to Miss Gabriel Preiss of Prague, Czechoslovakia, at Prague, April 1.

WILLIAM HENRY JAMIESON, Ottawa, Ill., to Miss Haylord M. Norrick of Indiana, May 17, in Ottawa.

ELMER HENRY GRAMLING, Milwaukee, to Miss Lila White of Manitowoc, Wis., April 21.

ERNEST GLADSTONE, New York, to Miss Edith Bailey of New Haven, Conn., April 28.

ELMER LINCOLN MATHER, Akron, Ohio, to Miss Ruth Fairfield of Elkhart, Ind., May 7.

IPOLITAS B. BRONUSHES to Miss Edna Marie Droppelman, both of Baltimore, May 23.

VINCENT JOHN O'CONOR to Miss Katherine Carey, both of Chicago, June 1

Deaths

John Herbert Claiborne ✱ New York; University of Virginia Department of Medicine, Charlottesville, Va., 1883; veteran of the Spanish-American War; member of the Medical Society of Virginia, American Academy of Ophthalmology and Oto-Laryngology, American Ophthalmological Society and New York Ophthalmological Society; formerly clinical instructor in surgery, department of ophthalmology, at the Cornell University Medical College, New York; ophthalmologist to the Flushing Hospital and Dispensary; died, May 27, aged 61, from heart disease.

Abraham Given Shortle ✱ Albuquerque, N. M.; Baltimore Medical College, 1896; founder and president of the Albuquerque Sanatorium; member of the National Society for the Study and Prevention of Tuberculosis; formerly president of the Surgical and Medical Association of the Southwest and the New Mexico Antituberculosis Society; secretary of the New Mexico Public Health Society, and member of the American Climatological and Clinical Association; died, May 26, aged 41, from septicemia.

John James Andrews, Chicago; McGill University Faculty of Medicine, Montreal, 1903; L.R.C.P., L.R.C.S., Edinburgh, Scotland, L.F.P.S., Glasgow, Scotland, 1904; formerly clinical assistant surgeon and instructor of gynecology at Northwestern University Medical School, Chicago; at one time ship surgeon on boats plying between Montreal and Liverpool; served in the C. A. M. C., during the World War with the rank of captain; died, May 30, after a short illness, from streptococcemia, aged 42.

Daniel Buttrick Smith ✱ Cleveland; Charity Hospital Medical College, Cleveland, 1867; formerly president of the board of education; at one time professor of diseases of the eye and ear, Cleveland College of Physicians and Surgeons; also lecturer at his alma mater and Western Reserve University Medical School; for fifty years on the staffs of the Lakeside, St. Vincent's, Charity, Cleveland City, and St. Luke's hospitals; died, May 19, aged 71.

William Monroe Lewis ✱ Los Angeles; Bellevue Hospital Medical College, New York, 1879; founder and president of the Pacific Hospital; formerly adjunct professor of materia medica and therapeutics, and lecturer on pharmacy at the Kansas City University Medical Department; at one time president of the Los Angeles County Medical Society; died, May 19, aged 64, from heart disease.

Ephraim K. Browd, New York; Medical Department of the University of the City of New York, 1886; member of the Medical Society of the State of New York; gynecologist to the People's Hospital, and the New York Polyclinic Medical School and Hospital; died, May 17, aged 62.

John R. Robinson, Colorado Springs, Colo.; Jefferson Medical College, Philadelphia, 1882; member of the Colorado State Medical Society and the Colorado Ophthalmological Society; served two terms as mayor of Colorado Springs; died, May 10, at Saint Joseph, Mich., aged 66.

Hiram Eldridge Conley, Cannon Falls, Minn.; State University of Iowa College of Medicine, Iowa City, 1884; member of the Minnesota State Medical Association; president of the board of education; died suddenly, May 27, aged 66, from heart disease.

Elmer Brownell Beaudry, New York City; Medical Department of the University of the City of New York, 1883; member of the Medical Society of the State of New York; died, May 22, aged 61, at the Union Hospital of the Bronx, from pneumonia.

George Patrick Gill, Rockford, Ill.; Northwestern University Medical School, Chicago, 1906; member of the Illinois State Medical Society; served with the British R. A. M. C., during the World War; died, May 5, aged 39, from septicemia.

Thomas Walker Simpson, Napanee, Ont.; Victoria University Medical Department, Toronto, Ont., Canada, 1884; L.R.C.P., Edinburgh, Scotland, 1884; formerly mayor and town councilor of Napanee; died, May 15, from pneumonia.

William Radford Gray, Bellingham, Wash.; State University of Homeopathic Medicine, Iowa City, Ia., 1890; for eleven years a member of the board of education; died, May 15, aged 60, at St. Joseph's Hospital, from paresis.

✱ Indicates "Fellow" of the American Medical Association.

John Starr Sappington, Fort Sam Houston, Texas; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1913; served in the M. C., U. S. Army, during the World War; died, May 7, at West Point, Ga., aged 31.

Frank Fuller Hutchins, Antwerp, N. Y.; Medical Department of the University of the City of New York, 1893; member of the Medical Society of the State of New York; died, April 18, aged 53, from pneumonia.

John W. Ellis, Killeen, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, Fort Worth, Texas, 1901; member of the State Medical Association of Texas; died, May 11, aged 44.

William J. Duff, Port Huron, Mich.; University of Michigan Medical School, Ann Arbor, 1885; member of the Michigan State Medical Society; city health officer; died, May 26, aged 65, from angina pectoris.

Thomas A. Matthews, Castalia, N. C.; University of Maryland School of Medicine, Baltimore, 1890; member of the Medical Society of the State of North Carolina; died, April 29, aged 54, following a long illness.

William J. K. Lavin, Walnuthill, Ky.; Medical Department, University of Louisville, Louisville, Ky., 1893; formerly county physician; also a druggist; died suddenly, May 8, aged 52, from acute indigestion.

Emerson E. Newcom, Blackford, Ky.; Medical Department, University of Louisville, Louisville, Ky., 1894; member of the Kentucky State Medical Association; died, March 10, aged 56, from chronic nephritis.

Emmett Grant Fish, Union Springs, N. Y.; Cornell University Medical College, New York, 1904; member of the Medical Society of the State of New York; died, May 9, aged 44, from pneumonia.

Thomas Edward Costain, Chicago; Chicago Homeopathic Medical College, 1892; professor of surgery at Hahnemann Medical College and Hospital of Chicago; died, May 31, aged 61, from uremia.

James Thomas Faulkner, Lansing, Kan.; Kansas City Medical College, Kansas City, Mo., 1903; member of the Kansas Medical Society; died, May 1, aged 45, from cerebral tuberculous meningitis.

George G. E. Neuber, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; died suddenly, May 25, aged 60, from heart disease, while visiting a patient.

Charles Burdett Forsyth ● Alexandria Bay, N. Y.; Bellevue Hospital Medical College, New York, 1898; died, May 23, aged 45, at Ogdensburg, following an operation.

Chester Dexter Umberhine ● Santa Fe, N. M.; Rush Medical College, Chicago, 1885; died, May 12, aged 59, at Frankfort, Ind., from heart disease and dropsy.

David Denis Clark, Decatur, Ind.; Fort Wayne College of Medicine, Fort Wayne, Ind., 1891; formerly coroner of Adams County; died, May 1, aged 56, from erysipelas.

James A. Moreland, Jamestown, Pa.; Medical Department of Western Reserve University, Cleveland, 1882; died suddenly, May 16, aged 66, from heart disease.

James H. Christie, North Madison, Ind.; Cincinnati College of Medicine and Surgery, 1870; died, May 7, aged 72, at Indianapolis, from cerebral hemorrhage.

Elmer John Farnham, Patten, Me.; Jefferson Medical College, Philadelphia, 1899; also a pharmacist; died suddenly, May 7, aged 48, from heart disease.

Theron Earl Roe, Tigerville, S. C.; College of Physicians and Surgeons, Baltimore, 1910; died suddenly, May 11, aged 34, from cerebral hemorrhage.

Albert Josiah Taylor, Orlando, Fla.; Medical School of Maine, Portland, 1889; died, May 19, aged 55, following an operation for cholelithiasis.

Claud B. Van Horn, Woodson, Texas; Central College of Physicians and Surgeons, Indianapolis, 1892; died recently, aged 65, from diabetes.

Frederick W. Schule, Philadelphia; St. Louis Medical College, St. Louis, 1878; formerly of Chicago; died, May 20, aged 77, from myocarditis.

Thomas R. Thornton, Lees Summit, Mo.; St. Louis Medical College, St. Louis, 1868; died, February 26, aged 78.

William F. O'Brien, Fairland, Ill. (licensed, Illinois, 1881); died, May 13, aged 72, from senility.

Albert N. Fouch, Williams, Calif. (licensed, California, 1776); died, May 6, aged 92.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

COLLECTION AGENCIES

Two Concerns About Which Physicians Have Complained

THE UNITED STATES NATIONAL ADJUSTMENT COMPANY

During the past two or three years THE JOURNAL has received complaints from physicians in various parts of the country relative to the methods of a collection agency calling itself the United States National Adjustment Company and doing business from the Transportation Building, 608 South Dearborn Street, Chicago.

A physician in Oklahoma reported that he and other physicians of the same town had given several accounts to this concern and had been unable to get answers to inquiries concerning collections. At that time THE JOURNAL'S Bureau of Investigation took up the matter with the United States National Adjustment Company by telephone and the excuse offered was that the concern was extremely short of clerical help and was far behind in its correspondence. Later a physician from Arkansas made a similar complaint. The concern was again telephoned and a week later the physician notified us that he had, at last, received word from the agency "with a check and an explanation." Still later a Michigan physician wrote that he had given accounts to this concern for collection and that, while he had written them three letters within a month, he had not had the courtesy of a reply to any of them. Recently a Baltimore physician wrote that he had given the United States National Adjustment Company a large number of bills to collect and that "while they have collected some, they have not yet sent me any cash."

We are now in receipt of a letter from a Virginia physician reading in part:

> "I am enclosing proof of collection of one of my accounts given to a Chicago agency who have apparently obtained many physicians' contracts in Virginia. I know of none to whom they have ever remitted. Is there any way by which the American Medical Association could aid in this matter? I can get no reply from them in this case."

With this letter the physician enclosed a letter from the United States National Adjustment Company to a previous patient acknowledging the receipt of a cheque paying in full the account that had been owed the physician. There was also enclosed a formal receipt covering the same amount. The dates of the letter and the receipt show that the patient paid the account to the United States National Adjustment Company in October, 1921; the physician to whom the account was owing writes on May 25, 1922, that the money has not yet been remitted to him.

In February of this year the United States National Adjustment Company called up THE JOURNAL office protesting against its criticisms made in letters written to physicians in answer to inquiries regarding the concern. The company was told that documentary evidence was on hand to prove every statement made. The concern then stated that it was able to produce overwhelming evidence of good service it had rendered physicians. It was suggested that such evidence be submitted and it would be given due weight. This was four months ago. So far nothing further has been heard from them!

THE NATIONAL ADJUSTING ASSOCIATION

The National Adjusting Association is a collection agency that seems to have its headquarters in Los Angeles and a branch at 37 West Van Buren Street, Chicago. Complaints regarding the methods of this concern have been received from physicians in Colorado, Illinois, Indiana and Kentucky. Two physicians from the same city in Kentucky have written

recently that the local agent obtained accounts from them by stating that the National Adjusting Association did not use the correspondence method of collecting but put collectors in the field who did business by personal contact. After placing a number of bills for collection with the concern, both these physicians found that the agency was using form letters and similar methods of attempting to collect. Unfortunately, the physicians in each case had signed a contract which made no reference whatever to the methods employed in collection, but which did contain this clause:

"In event the undersigned should withdraw any claims after having assigned the same to said Association, the commissions thereon shall be paid to said Association the same as if said Association had collected such claims in full. . . ."

A clause of this kind in a contract would seem to put a premium on unsatisfactory service. All the collection concern would need to do would be to make the physician so disgusted with its methods as to cause him to desire to withdraw his bills from its hands. The company would thus get a lot of "easy" commissions.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Ammonol Tablets.—The Ammonol Chemical Company of New York City, shipped, between October, 1919, and June, 1920, a quantity of Ammonol Tablets from New York to Porto Rico. The product was misbranded. Physicians will

remember that THE JOURNAL has exposed the unscientific character of this product many times. Ammonol was one of the first products taken up by the Council on Pharmacy and Chemistry and a report published in THE JOURNAL, June 3, 1905. The federal chemists reported that analysis of Ammonol Tablets showed that it contained acetanilid, ammonium carbonate, sodium bicarbonate and sodium phosphate. The article was declared misbranded because it was so labeled as to deceive the purchaser in that it did not show on the label the quantity or proportion of acetanilid contained therein. Furthermore, it was falsely and fraudulently claimed in or on the trade package that the article was of inestimable value and efficacy in cases of influenza, rheumatism, indigestion, alcoholism, painful menstruation, etc. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9822; issued Jan. 27, 1922.*]

Johnson's Female Regulator.—The Logan Pharmacal Co., Philadelphia, and the France and New York Medicine Co., New York City, respectively, shipped between February, 1920, and February, 1921, from the states of Pennsylvania and New York, respectively, to the island of Porto Rico, a quantity of "Johnson's Female Regulator" which was misbranded. The federal chemists reported that analysis showed the product to consist of sugar-coated pills containing extracts of vegetable drugs. The product was falsely and fraudulently represented as an effective remedy for relieving pain during labor, and as efficacious in overcoming female debility, lack of ambition, tired feeling, suppression and other menstrual irregularities. In May and August, 1921, respectively, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9847; issued Jan. 27, 1922.*]

Fosfo-Ferrogen De Johnson.—A quantity of this product offered for sale and sold in the island of Porto Rico in July, 1920, was declared misbranded by the federal officials. The Bureau of Chemistry reported that the product contained caffein and compounds of iron, quinin, strychnin, arsenic and calcium. The package contained such claims as:

"Cerebral Reconstituent Increases Physical and Intellectual Power For General Debility."

"Valuable in the Treatment of Phthisis, Neurasthenia, Impotence, Nervousness and General Debility."

These and similar claims were declared false and fraudulent and, in May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9850; issued Jan. 27, 1922.*]

Bick's Nerve Tonic.—The Palestine Drug Co., St. Louis, Mo., shipped in April, 1919, a quantity of "Bick's Nerve Tonic" that was misbranded. The Bureau of Chemistry reported that analysis showed the product to consist of two preparations: (1) a brown tablet containing phosphorus, phosphates, zinc and iron and (2) a yellow pellet containing phosphate, iron and strychnin. The preparation was falsely and fraudulently claimed to be one of the best treatments known for "nervous rundown conditions" and for the treatment of weak and irritated conditions of the nervous system. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9839; issued Jan. 27, 1922.*]

Vitalo.—A quantity of this preparation was shipped in September, 1920, by the Allan-Pfeiffer Chemical Company, St. Louis, Mo., from Missouri to Louisiana. The Bureau of Chemistry reported that analysis showed the stuff to contain vegetable extractive matter, including damiana, nux vomica, sugar, alcohol and water. It was falsely and fraudulently labeled "A Nerve and Muscle Tonic," a "Remedy for General Weakness, Nervous Debility and for the Nerves, Brain and Muscles." In April, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9788; issued Jan. 11, 1922.*]

Correspondence

ALBERT ABRAMS

To the Editor:—From numerous lay sources we have been hearing that the medical profession, impelled by selfish motives, is unwilling properly to investigate the methods introduced by Dr. Albert Abrams, much the same in general tenor as expressed by Mr. Upton Sinclair in his letter published in THE JOURNAL, April 29, page 1334.

In the year 1917, when one of us was editor of the *California State Journal of Medicine* and the other was a member of the publication committee of the Medical Society of the State of California, we called on Dr. Abrams and proposed to him the following plan:

At the time to which we refer, Dr. Abrams claimed to be able to make immediate and accurate diagnoses, a drop of the patient's blood only being required, in these distinct conditions: hereditary syphilis, acquired syphilis, cancer, tuberculosis, pregnancy, streptococcus infection, and colon bacillus infections. He was unwilling, at that time, to commit himself beyond this group.

We offered to furnish him with blood of 200 patients from the University of California and Stanford University

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clinics, each of whom was known to be the subject, in uncomplicated form, of but one of the diseases noted. With the blood, Dr. Abrams was to be given the clinic number of the patient and to have access to both the patient and his record immediately after rendering the diagnosis in writing. His representative was to be allowed to be present when the blood was taken from the patient in order that no incorrect clinic number might be substituted.

The findings of the investigation were to be published in the *California State Journal of Medicine* as a report, without comment; the list of known diagnoses in the 200 cases to be accompanied by the diagnoses as established by Dr. Abrams from his examination of the blood. It was stated to Dr. Abrams that the *California State Journal of Medicine* would reserve the right to criticize the method editorially, such criticism to be favorable or adverse as the results of the investigation would warrant.

Dr. Abrams refused flat-footedly in any way to cooperate in such an investigation.

SOL. HYMAN, M.D.,
ALFRED C. REED, M.D.,
San Francisco.

"DETOXIFYING DEVICES IN THE LIVING BODY"

To the Editor:—I was very much interested in the editorial on "Detoxifying Devices in the Living Body" (THE JOURNAL, May 6, p. 1390). We have been working along this line for a few years and find not only the immune reactions which you mentioned, but several more of a synthetic nature, which are extremely interesting. We also find that some of the reactions are quite specific for certain species. For example, we find that human beings frequently employ an entirely different reaction for the detoxication of a certain chemical substance (phenylacetic acid, in particular) than that found in the body of the dog under like circumstances.

Perhaps, most interesting of all, if not the most important, is the fact that the animal body, as shown by some of our recent results, can build out of waste nitrogen products (urea) the necessary aliphatic amino-acid for the detoxication of certain aromatic fatty acids. We find that the animal body can build glycocoll out of the urea fraction of urinary nitrogen. The human body can build the amino-acid glutamin (glutaminic acid) in addition to glycocoll. The chicken builds ornithin in the same way to protect itself against benzoic acid, and we believe that for protection against brombenzol the dog will, if furnished organic sulphur, be able to build cystin.

I believe that you have the right idea when you say that a great many immunity reactions are fairly simple and of a chemical nature. I think that the chemical defense mechanism of the body will yield some new light on the subject of immunity when better understood.

Some of our results were presented in a general way recently: "The Fate of Foreign Organic Compounds in the Animal Body" (*Physiological Reviews*, Vol. **2**, No. 2, 1922). "Synthesis of Amino Acids in the Animal Organism (*Journal of the American Chemical Society* **44**:618, 1922).

CARL P. SHERWIN, M.D., New York.
Professor of Chemistry, Fordham University School of Medicine.

[COMMENT.—We are glad to refer to these researches of our correspondent, whose investigations have added to our knowledge of the detoxifying devices of the organism. In his latest contribution (Shipley and Sherwin: Synthesis of Amino Acids in Animal Organisms, I, Synthesis of Glycocoll and Glutamine in the Human Organism, *J. Am. Chem. Soc.* **44**:618 [March] 1922), it has been shown that man will synthesize glycocoll at the expense of urea, as do the lower animals. The synthesis of another amino-acid (glutamin) at the expense of urea nitrogen has also been demonstrated in the case of a man. The two amino-acids may be built simultaneously as readily as either compound alone. Thus, when 3 gm. of benzoic acid was fed to a healthy man, 92 per cent. of it was detoxicated by excretion in the conjugated form of benzoyl glycocoll (hippuric acid). Similarly, phenylacetic acid fed in even larger doses reappeared conjugated with glutamin. The experiments showed that neither benzoic nor phenylacetic acid when fed in moderate doses (from 3 to 10 gm.) to man acts as a stimulator of endogenous metabolism when the subject has been reduced practically to a state of endogenous protein catabolism. This is shown by the fact that the amount of total nitrogen excreted is not increased during the period of acid ingestion. It is also shown that neither glycocoll nor glutamin is built at the expense of "extra destroyed protein," but rather at the expense of one or more of the nitrogenous constituents of the urine, and of these only urea is affected to a marked degree. During the periods in which glycocoll and glutamin were being synthesized in the organism for the purpose of rendering the ingested acids less toxic, the urea nitrogen dropped from about 75 per cent. of the total nitrogen to 28 per cent., and during a subperiod of a certain day, to the extremely low value of 12 per cent. of the total nitrogen. It appears to be a demonstrated fact that an organic acid is detoxicated at the expense of the urea nitrogen, and an inorganic acid (hydrochloric acid) at the expense of the ammonia nitrogen.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FERRÁN'S TUBERCULOSIS VACCINE

To the Editor:—I should like to get some information on the antituberculosis vaccine and serum prepared by the Spanish physician, Dr. Ferrán. Some clinicians of South America and in this country have reported favorably on both products.

VIRIATO A. FIALLO, M.D., Santo Domingo, R. D.

ANSWER.—A description of Ferrán's vaccine was published in the Madrid Letter (THE JOURNAL, Oct. 4, 1919, p. 1074). The consensus is that this product is still in its experimental stage. The Spanish physiologist Dr. Verdes Montenegro has recently stated (*Archivos de Medicina, Cirugía y Especialidades*, May 6, 1922, p. viii) that Ferrán's conception of tuberculosis has been received with the respect due a scientist but with evident coldness. He adds that Ferrán's experiments were repeated by Calmette in France, and Mayoral in Spain, but unsuccessfully. So far there is little positive evidence as to the value of Ferrán's preparation. Ferrán himself (*España Médica*, April 10, 1922, p. 1) practically admits that the preventive action of his antialpha vaccine is still unproved.

Declining Death Rate Among Negroes.—A remarkable decline has taken place in the last decade in the mortality of negroes, says the *Statistical Bulletin*, Metropolitan Life Insurance Company, April, 1922. This company, which has more than 1,600,000 colored policy holders, reports the mortality of colored policy holders in 1911 as 17.5 per thousand, and in 1921, 13.2 per thousand, a drop of 25 per cent. The improvement, says the *Bulletin*, is not local but represents a very broad movement affecting virtually all areas. There are many factors acting favorably on the health of the negro, among which is the development of health activities in the South and Southwest. The economic status of negroes, which has risen since the war, is also a factor favoring the negroes' health.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, July 11. Sec., Eclec. Bd., Dr. James Edwin Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 11. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

FLORIDA: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

HAWAII: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

ILLINOIS: Chicago, June 26. Supt. of Registration, Mr. V. C. Michels.

INDIANA: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

KANSAS: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

MICHIGAN: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 12-15. Sec., Dr. Cortez F. Enloe, State House, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

NEW JERSEY: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, July 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

NORTH DAKOTA: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 11. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Waubay, July 18. Director, Dr. H. R. Kenaston, Benesteel.

TENNESSEE: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.

TEXAS: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

UTAH: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

VERMONT: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

WASHINGTON: Olympia, July 11. Sec., Mr. William Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 11. State Health Commissioner, Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Hawaii January Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 9-12, 1922. The examination covered 10 subjects and included 55 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1922)	80
McGill University		(1919) 75, (1920)	83.5

Vermont February Examination

Dr. W. Scott Nay, secretary, Vermont State Board of Medical Registration, reports the written examination held at Burlington, Feb. 14-16, 1922. The examination covered 12 subjects and included 90 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1921)	92.9
University of Vermont		(1920) 82.6, (1921)	92.7
McGill University		(1920)	92.8

Book Notices

ABDOMINAL PAIN. By Prof. Dr. Norbert Ortner, Chief of the Second Medical Clinic at the University of Vienna. Authorized translation by William A. Brams, M.D., and Dr. Alfred P. Luger, First Assistant, Second Medical Clinic, University of Vienna. Cloth. Price, $5. Pp. 362. New York: Rebman Company, 1922.

English readers are fortunate in being able to obtain a translation of Dr. Ortner's little volume on differential diagnosis of abdominal pain. The translator, an American, through considerable contact with Dr. Ortner, has rendered a valuable service to a large number of readers unable to read the original. The arrangement of the text is such that one has merely to localize pain to any one of the various regions of the abdomen, and then consult this book. He will find a catalogue of all the possible causes of pain arising there. The most important or frequent cause is mentioned first. This condition is then described in detail. If more than one organ or tissue which might give rise to pain lies in this region, diseases of each are given full consideration, following which is given differential diagnosis of all other conditions that might cause similar pain. These descriptions must, of necessity, be brief. The last chapter is devoted to a discussion of pain, according to radiation, effect of food, bowel movement, bodily movement, menstruation, etc. It is bewildering to note how many varieties and causes of abdominal pain there are, and then realize the enormous experience the writer must have had. One feels, as he reads this volume, that he is getting first hand information from a teacher, and not a rehash of other textbooks. Students, practitioners and specialists, either internists or surgeons, should alike profit by this new addition to the English medical armamentarium.

SYSTEM DER NEUROSE. Von Dr. Emil Kugler. Paper. Price, 84 marks. Pp. 188. Berlin: Urban & Schwarzenberg, 1922.

This is a comprehensive but somewhat ponderous exposition of the neuroses, based on a personal study of two thousand cases from all walks of life and observed in the course of thirty years. In the first part the neuroses are taken up according to their causation. The somatic causes are classified as: neuropathic constitution; anomalies of the ductless glands; migraine; anemia; malnutrition; vascular disorders; digestive disorders, and intoxications. The psychic causes are classified as: peculiar relation to surroundings; error in upbringing; sexuality in youth; marriage; climacterium; overwork; exaggerated notions of disease, and traumatic neuroses. In the second part a symptomatic classification is given: exhaustion neuroses; vascular neuroses; the neuroses of fear, and those of hypochondriasis, depression and hysteria. Throughout the work the author keeps close to the facts as observed in his numerous cases, and he has also made a profound study of the literature, with references to the more important articles conveniently arranged at the end of each chapter.

EXOPHTHALMIC GOITRE. A Lecture Delivered at the Northeast London Post-Graduate College, April 27, 1921. By Walter Edmunds, M.A., M.Ch.Cantab., F.R.C.S., Consulting Surgeon to the Prince of Wales' General Hospital. Cloth. Price, 3 shillings 6 pence. Pp. 35, with 5 illustrations. London: Baillière, Tindall & Cox, 1921.

This is a lecture delivered to graduate students. It is decidedly discursive and incomplete. Pathology and etiology, clinical features and treatment, are each given a few pages. There is something concerning the history of the disease and a not infrequent expression of individual opinion with which one is not always in accord. The most interesting feature of the book is the pair of illustrations showing the parathyroids of the Indian rhinoceros, the specimens of which are in the Museum of the Royal College of Surgeons.

Society Proceedings

COMING MEETINGS

Arizona Medical Association, Prescott, June 14-15. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Colorado Congress of Ophthalmology and Oto-Laryngology, Denver, July 28-29. Drs. M. D. Brown and J. M. Shields, Metropolitan Bldg., Denver, Secretary.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Wheden, Sheridan, Secretary.

AMERICAN PEDIATRIC SOCIETY

Thirty-Fourth Annual Meeting, held in Washington, D. C., May 1-3, 1922

(Concluded from page 1751)

The Basal Metabolism of Prematurity

DRS. FRITZ B. TALBOT and WARREN SISSON, MARGARET E. MORIARTY and ALICE J. DALRYMPLE, Boston: The seven of twenty-two prematures studied by us in relation to caloric intake and weight curve were organically sound but had the characteristic appearance of premature infants, and, so far as we have been able to ascertain, were prematurely born from one to two months. They had a high pulse rate and an unstable temperature, and were too weak to nurse the breast at first. They were consequently fed by a Breck feeder or a tube, and the precautions usually taken with the new-born were carried out. There was no more variation in the metabolism findings previously obtained in the studies of new-born infants. The caloric intake per kilogram of weight was high. The basal metabolism, on the other hand, was strikingly low, no matter how it was charted. This low metabolism seems to be dependent on the fact that there is a small amount of active heat-forming tissue in these incompletely developed infants. This evidence is contrary to the generally accepted belief that the small subjects with relatively large body surface produce a more uniform amount of heat per unit of body surface than do larger subjects. Premature infants are so protected with blankets and hot water bottles that an excessive loss of heat is prevented. These infants are unable to compensate for such a loss of heat, as evidenced by the subnormal temperature which results from deprivation of external warmth. The infants did not gain weight until they were able to digest close to 200 calories in the day. The only food that was assimilated completely to accomplish this was human milk. It was also found that a relatively large proportion of the food intake goes into new body tissue. A large excess of caloric intake over the basal is necessary because of the relatively greater amount of growth essential for the normal development of these babies.

DISCUSSION

DR. JULIUS H. HESS, Chicago: The important thing in these premature infants is to give sufficient fluids. We have found it impossible to give anything like the caloric needs during the first week or two, but unless we give from one seventh to one eighth the body weight in total fluids the babies do not do well. The amount of fluid makes a surprising difference in the quantity of breast milk that they can metabolize, and a surprising difference in the results.

Celiac Disease

DR. ROOD TAYLOR, Minneapolis: Of the seven cases included in this study, the disease was preceded in six by a long period of malfeeding, and in four by a definite parenteral infection. Gastric achlorhydria was present in five cases in which the stomach contents were examined. The duodenal juice was examined in three cases, and a pathologic pigment, urobilinogen, was found in one case. This is evidence of a diffuse pathologic condition in the liver. In a second case there was a complicating Banti's disease; in a third case, leucin and tyrosin were present in the urine, and in all the patients the liver was smaller than normal. The duodenal juice in all cases contained bile salts and starch and protein splitting ferments. Examination of the stools in four cases revealed fairly good fat splitting. Data are also included which afford evidence of the considerable therapeutic efficacy of lactic acid milk and dextrose in the treatment of this disease.

Indications for Tonsillectomy in Infancy and Childhood

DR. HENRY HEIMAN, New York: The indiscriminate removal of tonsils should be condemned. If obstructive symptoms are present with evidence of high arched palate as the cause of obstruction, the adenoids should be removed. If there is persistent nasal discharge that does not yield to the usual therapeutic measures and in the absence of sinusitis, adenoidectomy should be performed. Tonsillectomy is indicated if the tonsils are sufficiently large to cause obstruction, difficulty in breathing or swallowing; if the frequent occurrence of tonsillitis has produced definite disease in the tonsils; if there are recurrent accumulations of cheesy material in the crypts of the tonsils, or if on pressure this may be extruded from the tonsils, with the presence of foul odor and symptoms of toxic absorption; and in cases of persistent cervical adenitis following tonsillitis whether of pyogenic or tuberculous origin. Each case must be studied individually, and the advantages and risks considered before operation. Tonsillitis alone or when associated with other conditions is usually but a manifestation of systemic infection. If the infection becomes generalized, it occurs in spite of the tonsil, not because of it.

DISCUSSION

DR. EDWIN H. PLACE, Boston: The evidence as to the protective function of the tonsil is open to some question. There is some evidence that the tonsils are the point of attack in scarlet fever. If the tonsils are removed, the temperature drops by crisis, and the disease continues in an extremely mild form. The evidence is as yet not such that we should say that the tonsils should come out in scarlet fever; but as to the protective function of the tonsils, the evidence, in my opinion, is the other way.

DR. H. M. MCCLANAHAN, Omaha: If a child has a high arched palate, the removal of the adenoids does not correct the trouble. In Omaha a wave of tonsillectomy beyond belief has passed over the city. The family physician or the pediatrician should decide whether the tonsils should be removed. When there is cervical adenitis, rheumatism or an infectious process, whatever may be the function of the tonsils, they are no longer performing it, and should be removed.

DR. LAWRENCE T. ROYSTER, Norfolk: In Virginia, one or more laryngologists with nurses and an anesthetist hold clinics in rural communities and operate on all children rounded up for this purpose. These cases are passed on by nurses. They are simply enlarged tonsils or appear to be so to the nurse. In the absence of any distinctive symptoms, an enlarged tonsil is not necessarily an indication for operation. No child should be subjected to the risk of tonsillectomy until examined for definite indications.

DR. CHARLES HERRMAN, New York: Formerly I was a medical school inspector. We were expected to find that from 20 to 25 per cent. of school children had enlarged tonsils; if a smaller number was recorded, it was thought that the examinations were not sufficiently careful. The school nurse then made repeated visits to the parents until treatment was given. The result was that a certain number of children were subjected to tonsillectomy in whom the operation was not necessary. If I understood correctly, Dr. Heiman stated that the presence of a high arched palate and a sinusitis were contraindications to operative interference. Though persons with a high arched palate cannot be entirely relieved of their obstructed nasal breathing by operative procedures, they

certainly can be improved; the same holds true of persistent nasal discharge and sinusitis.

DR. ISAAC A. ABT, Chicago: If there is a reasonable doubt after mature deliberation, and after a laryngologist and a general practitioner or a pediatrician have studied the case, the child should be given the benefit of the doubt and the tonsils should be removed.

Study of Brain Tumors in Young Children

DRS. FREDERIC H. BARTLETT and MARTHA WOLLSTEIN, New York: Among 4,563 necropsy records at the Babies' Hospital, there were nine cases of neoplasm of the brain, an incidence of 0.2 per cent. The ages ranged from 2 weeks to 3 years. In five cases the neoplasm was located in the cerebellum, and two in the cerebrum. The five infratentorial tumors involved the vermis and extended into one lobe of the cerebellum, compressing the other lobe; all had distorted the medulla. None gave rise to metastases in other organs. All the tumors were large and very vascular, and contained small hemorrhages and areas of necrosis. Hydrocephalus was present in all five cases. The two supratentorial tumors were dissimilar in location and structure. One tumor involved the corpora striata, optic thalami and the corpora quadrigemina. Histologically, this tumor was a glioma. In the other case the tumor was a gliosarcoma. There is every reason to believe that the tumors had grown to a considerable size before they gave symptoms that attracted attention. Then the symptoms were comparable to those in adults. Two symptoms commonly associated with brain tumor are vomiting and convulsions. While these patients were in the hospital, none presented any unusual frequency of vomiting, nor was the vomiting of an explosive type. Convulsions occurred in only one case, and then only a few hours before death. The infrequency of vomiting and convulsions in this series may possibly be explained by the gradual increase in intracranial pressure and by the extreme adaptability of the young brain tissue to pressure gradually applied. The spinal fluid obtained on lumbar puncture in these seven cases varied in amount from 5 to 30 c.c. The pressure was increased only when the patients were seen early. The fluid was clear and colorless except in one case, in which it was yellow. The cells were increased in only one case. Globulin was not increased, except in the case in which the fluid was yellow. In this case the fluid was blood tinged at the necropsy, which was explained by a comparatively large amount of hemorrhage and necrosis in the tumor.

DISCUSSION

DR. CHARLES HUNTER DUNN, Boston: Four or five cases of brain tumor have come to necropsy at the Children's Hospital. All were much like the cases Dr. Bartlett described. Four of the tumors were cerebellar, and two originated in the basal ganglions. None of the children showed convulsions. I have seen only one successful operation on a brain tumor in a young child, and in that case, in which the patient was 2 years of age, the tumor was cortical in origin and convulsions were the first symptom. It is only in the cortical tumors that convulsions are an early symptom.

Aplastic Anemia, with Report of a Case in a Child Four Years Old Markedly Improved by Transfusion

DR. CHARLES HERRMAN, New York: This child was admitted to the hospital with a history of fever and pain in the abdomen for two weeks. Examination revealed asthenia, marked pallor, puffiness of the face, and ecchymotic spots on the left calf. The temperature was 101 F.; pulse, 150; respiration, 30. The blood count revealed: Erythrocytes, 750,000; hemoglobin, 25 per cent; leukocytes, 2,500; polymorphonuclears, 25 per cent.; lymphocytes, 75 per cent. A transfusion of 380 c.c. of whole blood without citration was administered. Gradual but progressive improvement followed for a time. The patient died after five months.

DISCUSSION

DR. ROOD TAYLOR, Minneapolis: It is very doubtful whether the disease known as pernicious anemia ever occurs in infancy and childhood.

DR. ALFRED HAND, Philadelphia: I recently had a case somewhat similar to Dr. Herrman's except that the leukocyte count was somewhat higher, about 30,000. Transfusion brought the hemoglobin up to 85 per cent. The effect was transient, however. The following day the hemogobin was 20 per cent. The case progressed to a fatal issue.

DR. JOHN LOVETT MORSE, Boston: From the histories of these cases it seems that there must be some sort of intoxication as a basis. The general treatment should be directed to the elimination of the toxemia, and in that way we may possibly hit upon the cause. My feeling is that if such a patient gets well after transfusion, the case is not one of this form of anemia but a case of purpura.

Lucilia, the Ubiquitous Paralysis Fly and Its Ally, the Buzzard.

DR. E. W. SAUNDERS, St Louis: There is proof that *Lucilia* is the obligate host of a botulinoid organism, a toxivirus which paralyzes and kills any vertebrate so far experimented on. Lucilia epizootic is primarily an avian disease. I raise the query whether it is not incumbent on the advocates of *Lucilia* causation of human poliomyelitis to prove that man, who is admittedly accessible to *Lucilia*, is susceptible to its toxivirus, or whether it is obligatory for despisers of *Lucilia's* claims to prove that man alone of all vertebrates is insusceptible. The universal distribution of *Lucilia*, its extreme hardihood, its activity in human and animal habitations when the thermometer without registers 40 below zero, and its habit of depositing its paralysant ova indifferently on animal or vegetable matter, either fresh or in a state of putrescence, all incriminate this insect. The buzzard is protected by law in every state, in spite of the fact that it has been proved guilty of carrying disease germs over whole continents. There is necessity for immediate destruction of this bird by the federal government.

Case of Convulsions and Mild or Pseudo-Petit Mal Due to Congenital Irritation

DR. HENRY T. MACHELL, Toronto: A boy, aged 4, was taken suddenly ill with convulsions last July; no diagnosis as to cause was made at the time. About September 1 he began to have petit mal attacks which increased in number and severity until he was having from ten to twenty-four a day, falling and bruising his head and face repeatedly. In February he had screaming spells, and grasped the genitals every time he urinated. Investigation revealed irritation under the foreskin, on freeing which, the screaming and petit mal attacks ceased promptly. Two months later the boy was having from two to fifteen falling attacks daily. It would seem that the theory that the attacks were due to genital irritation must be abandoned, and that we must fall back on the original petit mal theory.

Xanthoma Tuberosum with Diabetes Insipidus

DR. P. J. CROZER GRIFFITH, Philadelphia: A boy, aged 9 years, was seen, Sept. 21, 1921, on account of "yellowness" and swelling of the abdomen. Enlargement of the abdomen was noted at 3 years, but was temporary. He was apparently in good health until January, 1919, when he had an attack of jaundice from which he recovered in two or three weeks. In April, 1920, a fall on the head was followed by a lump which disappeared, but soon another developed which was excised and the bone scraped. Injections of mercuric chlorid were started on the ground of possible syphilis. A few days later icterus developed; the abdomen enlarged, the liver also enlarged, debility and emaciation came on, and these symptoms have continued. At the same time small nodules appeared on the skin of the palms and the neck, and these spread more or less over the body. In the summer of 1921, polydipsia and polyuria developed. There was universal jaundice. There were some nodules on the skull. Parchment yellow papules and maculopapules were present, especially about the nose, mouth, eyelids, side of the neck, axillae, palms, and the flexor and extensor surfaces of the limbs; they were large and abudant about the knees. The spleen became enlarged and was felt 4 cm. below the costal margin. The blood pressure was particularly low: systolic, 78; diastolic, 58. The amount of urine varied from 5,000 to 8,000 c.c. daily. Under the administration of sodium chlorid it rose to 10,000 c.c. The specific gravity was usually below 1,007. Pituitary extract given by mouth had no effect, but pituitrin "O" given hypodermically, 1 c.c. daily, reduced the amount of urine to normal

but did not affect the specific gravity. A study of the basal metabolism revealed nothing abnormal. The only abnormalities of the blood were a slight leukocytosis and an increased resistance to hypotonic salt solution; the blood sugar was 0.06 per cent.; the blood cholesterol, 397 mg. per hundred cubic centimeters. The Wassermann reaction was negative. The feces contained no bile pigment; there was an excess of fat. The phenolsulphonephthalein test of the kidney function gave an excretion of 25 per cent. the first hour, and 10 per cent. more the second hour. The child was in the hospital for two months, and left with little change in his condition. Xanthoma tuberosum is an exceedingly rare condition. It seems probable that this is the second case on record.

A Peculiar Case of Purulent Meningitis in the New-Born

DR. T. DE WITT SHERMAN, Buffalo: This case is unusual in that the exciting agent belonged to the group of *Bacillus lactis-aerogenes*, and that the isolated bacillus could not be identified with any known organism. The intestinal origin of the infection was corroborated by the pathologic changes in the liver. The baby was normal until it was 3 days old, when it developed a convulsion, a temperature of 104 F. by rectum, and tonic contraction of the right arm, with contraction of the flexor muscles of the forearm, causing a condition resembling tetany. From the onset on the third day until the sixth day of life, the baby had numerous, and at periods continuous, convulsions. On the seventh day it developed Cheyne-Stokes respiration and cyanosis, and died. The diagnosis was meningitis, probably hemorrhagic. The diagnosis following necropsy was suppurative leptomeningitis, acute catarrhal gastro-enteritis, acute hepatitis, degeneration of the heart and kidneys, and acute swelling of the spleen.

An Unusual Case of Mediastinal Tumor

DR. THOMAS B. COOLEY, Detroit: In a boy of 7, previously apparently well, a very large tumor mass in the mediastinum caused sudden grave dyspnea. The mass seemed to fill more than half the thorax. A provisional diagnosis of Hodgkin's disease, persistent thymus or lymphosarcoma was made. An axillary node removed later showed nothing characteristic histologically. Because of two grave attacks of dyspnea, it was decided to resort to intensive roentgen-ray treatment. There were no more attacks of asphyxia after the first treatment. This was probably Hodgkin's disease, or lymphosarcoma.

Prognosis and Treatment of Tuberculosis in Infancy and Childhood

DR. ROWLAND GODFREY FREEMAN, New York: It is characteristic of tuberculosis in early life that it may cause considerable temperature elevation with little leukocytosis or increased polymorphonuclear count. There is very little emaciation, and the lesion is more likely to be in the lower lobes of the lung than in the apexes. Tuberculosis in infancy which is localized may be cured by prompt interference. If, however, it has involved the lungs, it rapidly becomes a generalized tuberculosis and gives an absolutely bad prognosis. If an infant or young child with a chronic lung condition emaciates rapidly, the probability is that the condition is not tuberculosis. Tuberculosis of the lungs in children more than 1 or 2 years of age may in many cases be cured if prompt action is taken, fresh air used persistently, heliotherapy used cautiously, and rest given for a long period; and if a nourishing and digestible diet and cod liver oil are given. These children, if destined to do well, rapidly lose their fever and soon gain weight.

Dosage of Diphtheria Antitoxin

DR. EDWIN H. PLACE, Boston: The effective dose of antitoxin must be determined chiefly by the results actually obtained in practice rather than by *a priori* facts from animal experiment. In the south department of the Boston City Hospital, the drop from an average of 40 per cent. to about 15 per cent. in 1895 occurred with a dosage of from 1,500 to 2,000 units. It was thus evident that doses now considered relatively small would effectively control a large percentage of cases, and it soon became evident that late in the disease no dose was effective. Figures collected in the course of these observations tended to show that: (1) doses of from 2,000 to 4,000 units of antitoxin were inadequate in diphtheria treatment, even if repeated at intervals; (2) intravenous antitoxin in doses averaging 30,000 might save lives that might be lost with less adequate treatment, and (3) no dose of antitoxin is likely to reduce the mortality of diphtheria, as a whole, unless the delay in administration can be eliminated. It is not a bad dictum that any inflammation of the mucous membrane, unless proved clinically otherwise, should be treated as diphtheria. The fear of anaphylactic shock is much greater than facts justify, and the fear of diphtheria poisoning is tremendously less.

DISCUSSION

DR. L. EMMETT HOLT, New York: Dr. Place gives large doses because he always has been giving them. Progress is not made by people who repeat exactly the same therapeutic measures. I do not think Dr. Place would risk the lives of his patients if he gave the doses that others have found to be safe in the treatment of diphtheria.

DR. WILLIAM H. PARK, New York: We have tried different doses of antitoxin, from 2,000 to 16,000 units. It was surprising how little difference there was in the mortality. Those receiving the larger doses made quicker recoveries, but the large doses did not seem to save more lives. I think that Dr. Place may with safety risk giving smaller doses. We have found it possible to prepare a serum for intravenous injection that causes no chills. I think that we are getting together on the belief that the intravenous injections are better than the subcutaneous and intramuscular injections; that a single dose is necessary, repeated, if one wants to repeat it, and that a large enough dose is necessary; but you may give more if you want to do so.

Study of Acidosis Due to Ketone Acids

DRS. J. L. GAMBLE, S. G. ROSS and F. F. TISDALL, Baltimore: Using as subjects epileptic children who were being fasted as a therapeutic measure, it was undertaken to determine the extent to which the reduction of the plasma bicarbonate during fasting is due (1) to depletion of the inorganic base of the plasma, and (2) to the concentration of ketone acids developing in the plasma. It was found that the total inorganic base concentration was during fasting accurately sustained at its usual average value. The reduction of bicarbonate was thus apparently due entirely to the concentration of abnormal organic acids in the plasma. This inference was sustained by direct measurements of the concentration of ketone acids in the plasma. It was also found that small amounts of sucrose by mouth brought about a restoration of the bicarbonate concentration to its usual size. From these data it is inferred that glucose rather than bicarbonate is the logical agent in the treatment of nondiabetic ketosis.

DISCUSSION

DR. OSCAR M. SCHLOSS, Boston: This work falls in line with clinical observations of the last few years in reference to the use of glucose in the treatment of ketosis rather than the use of sodium bicarbonate. In a number of cases it has been extremely interesting to see children with an extreme degree of acidosis due to ketones relieved in the course of twelve or fourteen hours by the administration of large amounts of glucose.

DR. W. MCKIM MARRIOTT, St Louis: This point, that it is not necessary to give bicarbonate in acidosis due to ketones, is of great practical value. It is not only unnecessary to give bicarbonate, but is a distinct disadvantage to do so. That has been brought out by experience as well as by theoretical speculation. When we give sodium bicarbonate, the amounts of sodium and sodium ions in the blood is increased, and this increase disturbs the balance between the sodium, calcium and magnesium ions. There is another type of organic acidosis which is accompanied by dehydration while there is a considerable excess of fatty acids. In these cases the administration of sodium bicarbonate will temporarily cause a cessation of symptoms; but, unless the cause is removed, the effect of the bicarbonate will be relatively ineffectual. In cases of this type as well as those due to ketosis, one may employ glucose.

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Imidazol Excretion in the Urine Under Normal and Pathologic Conditions

DR. KARL K. KOESSLER and M. T. HANKE, Chicago: In 1919 we (1) published a colorimetric method for the quantitative determination of imidazols which enabled us to determine quantities as small as 0.01 mg. with an accuracy of from 0.5 to 3 per cent. The method is based on the interaction that occurs between imidazols and paraphenyldiazoniumsulphonate, and which on addition of a sodium carbonate solution results in the formation of a red color. There are other substances in the urine which give this reaction, as, for instance, certain aromatic oxyacids (phenols). Therefore, before the method can be applied to the urine, it is necessary to remove all other compounds which might give a similar color reaction, and all substances which might interfere with the color production. This is accomplished by a simplification of a method which Weiss had first developed for the partition of urine in a study of the urochromes. One hundred cubic centimeters of the exactly measured twenty-four hour specimen is precipitated with 25 c.c. of a saturated solution of lead acetate. The precipitate formed is composed of the lead carbonates, urates, sulphates, phosphates and certain chromogens, as urobilin. The precipitate is not removed by filtration, but sodium hydroxid is carefully added to the mixture until the supernatant liquid is colorless. Occasionally a urine sample contains so much coloring substances that two or even three 25 c.c. portions of lead acetate solution are required. From about 12 to 18 c.c. of sodium hydroxid solution must be added for each 25 c.c. portion of lead acetate solution. The second precipitate obtained on addition of the sodium hydroxid solution contains lead hydroxid and the lead salts of urochrome, urochromogen, of the aromatic oxyacids and of most purins. The clear liquid obtained on filtration from this voluminous precipitate is treated with from 1 to 2 gm. of disodium hydrogen phosphate, which removes the last traces of lead. The colorless filtrate is concentrated by heating on the steam bath, which removes the volatile phenols. The colorless or faintly yellowish clear liquid is made up to volume, and its content on imidazols is determined by the method described in 1919.

We could prove by precipitation with silver nitrate that 86.4 per cent. of the total color value is due to imidazol compounds. The imidazol content is expressed in milligrams of imidazolacetic acid, and the amount excreted in twenty-four hours is designated as the imidazol index (1.1). The study of the imidazol index in normal and pathologic conditions leads to these deductions: The imidazol excretion of the normal healthy adult varies between 100 and 180 mg. in twenty-four hours. This imidazol index is to some extent dependent on the protein intake, and decreases on a diet low in protein. In most pathologic conditions, the imidazol excretion lies close to the normal limits. In diseases which are associated with a marked retention of water, as cardiac insufficiency and cirrhosis of the liver with ascites, the imidazol excretion is often markedly decreased. The lowest values, however, from 0 to 40 mg., are observed in nephritis, especially those forms associated with retention of other nitrogenous metabolities. The determination of the imidazols in the urine (and in the blood) promises to yield valuable information regarding the excretory function of the kidney.

Effect of Substitution of Exogenous Fat for Tissue Fat on Heat Production and Fat Combustion

DRS. H. B. RICHARDSON and E. F. DU BOIS, New York, and E. H. MASON, Montreal: During a fast a diabetic patient continues to oxidize food elements derived from his own tissues. The question then arises as to what benefit results from reducing the diet below the amount so oxidized. Data bearing on this question were obtained by means of the respiration calorimeter. The seven patients studied had either mild or moderately severe diabetes. They were observed while fasting and again following a diet which replaced the food elements oxidized during the fast, the total calories and the calories from protein, carbohydrate, and fat as determined by the calorimeter, being used as a basis for comparison. The diet was given in small portions every two hours, and the observations were begun one and one half hours after the last food. The first group of patients studied received the equivalent of 1.5 gm. of protein per kilogram of body weight and the amount of fat oxidized while fasting. The increase in total metabolism over fasting averaged 3.7 per cent. A second group received the exact amount of protein, fat and carbohydrate oxidized while fasting. The increase in this group averaged 2.3 per cent. The increase for the whole series averaged 2.7 per cent. Excess of fat to the extent of from 50 to 230 per cent. above the amount metabolized while fasting caused rather less increase. This was true even when the diet containing the excess fat was continued for four days. The extension of the fast to two days and of the diet to between two and seven days produced no greater increase than did the shorter periods.

The protein metabolism increased somewhat with replacement diet, and also in three of the four patients to whom excess fat was given. The increase for the entire series averaged 16 gm. of protein a day. When the carbohydrate was replaced, patients with mild or moderately severe diabetes oxidized more carbohydrate than after twenty-four hours of fast. In such cases the fat metabolism decreased. When fat and protein alone were replaced, the patients oxidized less carbohydrate than after a fast. The metabolism of fat then increased, but only to an insignificant extent, averaging 3 gm. a day. The amount of fat metabolized seemed to bear little relationship to the amount given in the food. Sometimes less fat was metabolized when large amounts were given in the food, than when little or none was given. The present work shows that there may be grave errors in calculating the metabolism of fat from the fat in the food. This must be remembered in all calculations of the ratio between fatty acid and glucose. The fact that the foodstuffs metabolized on a replacement diet are essentially the same as when the patient is fasting suggests the need of further investigation into the cause of the improvement in diabetic patients during a fast. The well known reduction of metabolism by undernutrition is substantiated by these observations. A replacement diet continued four days did not cause a similar reduction. Replacement seemed to hold the metabolism at about the level previously reached by fasting.

Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum

DRS. JOSEPH A. CAPPS and GEORGE H. COLEMAN, Chicago: In a series of experiments for determining the localization of pain in the walls of the peritoneal cavity, our method is to pass a trocar into the abdomen and, after removal of the point, to insert a silver wire, with the end of which various parts of the parietal peritoneum and diaphragm are stimulated. The first subjects for observation were cases of ascites. Later on, however, we injected air into the abdominal cavity and found that this made it easy to explore the parietal wall and also the under surface of the diaphragm. Our conclusions, drawn from the experiments, are that: The parietal peritoneum, and its underlying serosa so far as explored, namely, all the anterior median areas and the lateral areas as far as the anterior superior spines, are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than 1 inch. Our observations confirm the conclusions of Ramström and Lennander that the parietal peritoneum is devoid of pressure sense. The peritoneum covering the diaphragm is devoid of pressure sense as applied by light contact or stroking of a beaded wire point. But to strong pressure with a beaded point or light contact with a rough point it is acutely responsive to the sense of pain. The localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord, and thence referred to the neck by the

sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself.

DISCUSSION

DR. EMANUEL LIBMAN, New York: The observations of Drs. Capps and Coleman are not only important from a theoretical standpoint, but they can be used with the greatest advantage in practical clinical work. In a number of cases, the formerly published observations of Dr. Capps helped me in making diagnoses. One case was of unusual interest. The patient became ill two weeks before I saw him, with his physician, complaining of pain in the shoulder, pain in the left side of the abdomen and pain on swallowing. Such a group of symptoms could be due to a lesion of the mediastinal pleura and a lesion of the outer part of the diaphragm. It was a bit far fetched to consider two such localizations. It was much more practical to consider the possibility of a lesion involving the pleura over the marginal part, and over the mesial part of the diaphragm. Such a condition could give the exact localizations of the pain from which the patient was suffering. On careful examination, a few fine friction râles were heard low down in the left axilla. A diagnosis was made of a lesion of the lowest part of the left lung. A lesion of such type, taking a long time to give physical signs, is often of tuberculous nature, although it may occur as a complication of influenza. When the patient entered the hospital a week after I first saw him, the roentgenologic examination revealed a lesion of the lung exactly where it had been clinically localized. Later, the lesion extended upward, and tubercle bacilli were eventally found in the sputum.

Experiments with Quinidin on Conduction and on the Refractory Period in the Dog's Heart

DRS. ALFRED E. COHN and ROBERT L. LEVY, New York: The experiments were performed on the assumption that circus excitations are responsible for the state of auricular fibrillation. The maintenance of this condition depends on the possibility of rapid reexcitement of the muscle, and this in turn on the duration of the refractory period, and the rate of the conduction of the impulses. The mass of the muscle must be a sufficient size, but this need not be considered, for the normal size of the auricle in man meets this requirement. We studied the rate of conduction and the duration of the refractory period in dogs, before and after the intravenous injection of quinidin sulphate. The rate of the heart was natural, and the vagus nerves were intact. Under ether anesthesia, the chest was opened in the median line. Nonpolarizable electrodes were fastened to the right auricle at two points, each being part of a galvanometer circuit, and the other electrodes being inserted in the tissue at the edge of the incision. The two records were photographed on the same film. This permitted the calculation of the rate of impulse conduction. The refractory period we found by tabulating chronologically the time between natural auricular activity and a signal point in the curve, made by stimulating the auricles with break induction shocks. The longest period not followed by a response is the refractory period. Our results were not uniform. The rate of conduction either rose or remained unchanged. This effect either facilitates the maintenance of the circus or has no influence on it. The refractory period was increased in four experiments and decreased in two. The increase in one and the decrease in another experiment was slight; in two experiments the increases were about 40 and 80 per cent. This effect is advantageous in the attempt to break the circus, and overbalances the effect on conduction which facilitates its continuance. The lack of uniform results parallels that found in administering quinidin to patients. These results differ from those of Lewis, which were uniform. The difference is probably due to the exclusion of the action of the vagus nerves in his experiments. The nature of the action of quinidin in terminating fibrillation is revealed by these investigations.

A Clinical Report on the Use of Quinidin

DRS. L. E. VIKO, H. M. MARVIN and PAUL D. WHITE, Boston: Of seventy-four cases of permanent auricular fibrillation or flutter treated with quinidin at the Massachusetts General Hospital and the New Haven Hospital, fifty cases, or 67 per cent. were returned to normal rhythm; of these, twenty-five cases relapsed after varying periods, while twenty-five cases, or 33 per cent. of the series still maintain normal rhythm after periods from one to over ten months. As factors in determining restoration and maintenance of normal mechanism, age, sex and etiologic type of heart disease seemed relatively unimportant; the older and arteriosclerotic types reacted slightly better than the younger and rheumatic cases. There was a striking parallelism between the probable duration of fibrillation and both restoration and maintenance of normal mechanism; in the cases of less than two months' duration, sinus rhythm was obtained in 82 per cent. and maintained in 73 per cent., while in cases of more than two years' duration only 48 per cent. were restored, and 13 per cent. maintained the new mechanism. Similarly, the presence of objective failure (edema, enlarged liver, etc.), either before or after digitalization made the cases unfavorable for restoration, but very much more likely to relapse. There appeared no close correspondence between the duration of fibrillation and the dosage necessary to restore normal rhythm.

Under quinidin, transitory bundle branch block was produced in two cases, and aberration of the ventricular complexes in four cases. After restoration of normal mechanism, the P R interval was beyond normal limits in fourteen cases, probably in part at least a digitalis effect. Measurements in ten cases by the "7-foot roentgen-ray plate" before and after restoration of normal mechanism disclosed no striking changes. Untoward results under quinidin therapy have occurred in five cases, or 6.7 per cent. of the series; in two of these, one a transient, unimportant peripheral embolism, and the other a fixed flutter, in which digitalis later induced a four to one auriculoventricular block, the results were not serious. In one case, fixed flutter with pulmonary embolism resulted in death. In two cases, sudden death was considered due to pulmonary or cerebral embolism. Permission for necropsy was not obtained.

In a few cases the improvement from restoration of normal rhythm was striking and unquestionable; in others, previous digitalization obscured the picture. Two patients not receiving previous digitalis showed definite clinical improvement following the establishment of sinus rhythm. Four patients not responding to digitalis gave excellent results with quinidin. Fourteen responding well to digitalis showed definite additional improvement from quinidin. In all, twenty patients (27.3 per cent. of the series) presented definite improvement from quinidin; it was notable that all but three of these had fibrillation of short duration.

In comparing the frequency of untoward results in 452 cases of fibrillation in which quinidin was given, as reported in the literature, with 200 cases of fibrillation in which quinidin was not given, the percentage of embolism was reasonably equal, but sudden death occurred more frequently under quinidin. The untoward results under quinidin occurred largely in cases with failure and fibrillation of long duration. In seven cases of paroxysmal fibrillation of flutter treated with quinidin, the results have been promising, but this series is not yet large enough to justify conclusions. If administered only to patients with permanent fibrillation or flutter of short duration and slight or no failure, and to patients with paroxysmal fibrillation or flutter, quinidin should prove a valuable and probably comparatively safe therapeutic agent.

Ventricular Hypertrophy: A Comparison of Electrocardiographic and Postmortem Observations

DRS. FRANK N. WILSON and GEORGE R. HERRMANN, Ann Arbor, Mich: In fifty-nine cases in which electrocardiographic observations were made during life, the relative weight of the two cardiac ventricles (the ratio L/R) was determined postmortem by the method of Lewis. According to the L/R ratio shown, the cases may be divided into four groups:

Group 1. L/R ratio above 2.20; abnormal left ventricular preponderance. Fifteen of our cases fell in this group. In only two of these did the electrocardiogram indicate definite left ventricular preponderance. In six instances the electrocardiogram indicated questionable left ventricular preponderance. In the seven remaining cases the curves were essentially of the normal type. Of the eight cases in which the electrocardiogram indicated left ventricular preponderance or questionable left ventricular preponderance, the

ventricular weight exceeded 250 gm. in five; it exceeded this figure in none of the seven cases which showed no electrocardiographic preponderance.

Group 2. L/R ratio from 1.80 to 2.20; left ventricular preponderance within normal limits. Sixteen of our cases fell in this group. The electrocardiogram indicated definite left ventricular preponderance in four, and questionable left ventricular preponderance in one. In three of these five cases the ventricular weight exceeded 250 gm. In one case the electrocardiogram indicated questionable right ventricular preponderance; in the remaining cases it was of the normal type. In none of these eleven cases did the ventricular weight reach 250 gm.

Group III. L/R ratio from 1.50 to 1.78; right ventricular preponderance within normal limits. Twenty-one of our cases fell in this group. In one case the electrocardiogram indicated definite left, and in one case definite right ventricular preponderance. The ventricular weight was low in both of these cases. In the remaining nineteen cases the electrocardiogram was of the normal type; the ventricular weight was below 250 gm. in all.

Group 4. L/R ratio below 1.50; abnormal right ventricular preponderance. Seven cases fell in this group. In none of these cases did the electrocardiogram indicate definite or questionable right ventricular preponderance; in one case the electrocardiogram indicated definite left ventricular preponderance (ventricular weight, 199 gm.). In the remaining six cases the electrocardiogram was of the normal type; in only one of these cases did the ventricular weight exceed 250 gm.

In our series of cases there is no relation between the ratio L/R and the form of the electrocardiogram when the ventricular weight is below 250 gm. When the ventricular weight exceeds 250 gm., a relation exists, but it does not appear to be a close one. We conclude that if the ratio L/R influences the form of the electrocardiogram, the effects of its influence are greatly disturbed, especially in hearts which are not greatly hypertrophied, by other factors which affect the form of the ventricular complex.

Action of Cinchophen in Human Subjects with Normal Nucleic Acid Metabolism

DRS. J. H. PRATT and G. P. GRABFIELD, Boston: Human subjects with normal nucleic acid metabolism, on a purin-poor (as near purin-free as was possible) diet, were given cinchophen (1 gm. three times a day) and their uric acid excretion studied. A preliminary period showed that the endogenous level of uric acid excretion varies greatly in different individuals (from 295 to 450 mg. a day, averaging 340 mg.); in addition, we noted variations amounting to as much as 30 per cent. in the same individual on different days. If cinchophen is administered in the dosage mentioned, over a two day period, there is a sharp rise in the uric acid excretion, which falls to the endogenous level on the withdrawal of the drug. If, however, the exhibition of cinchophen is continued over a five day period, there is a compensatory fall in uric acid excretion which may more than counterbalance the rise. The level of uric acid in the blood remained unchanged in these subjects. In certain subjects no demonstrable increase in uric acid excretion occurred. In these experiments the collection of specimens was controlled by creatinin determinations, and the diets were supervised with the utmost care to prevent the ingestion of purin-containing foods. We have been unable to demonstrate any change in the blood uric acid within two hours after the administration of 2 gm. of cinchophen. Experiments are now in progress to determine the distribution of blood uric acid and to determine the action of cinchophen in patients with damaged kidneys. One such patient so far studied has shown the usual rise after the administration of the drug.

Vitally Stainable Reticulation and Chromatic Granules in Erythrocytes Preserved in Vitro

DR. O. H. PERRY PEPPER, Philadelphia: Reticulation is found only in young erythrocytes, and it was hoped by determining how long this reticulation persisted in erythrocytes preserved in vitro to learn whether or not such preservation rendered the erythrocytes less suitable for transfusion. Human and rabbit erythrocytes were employed, and samples were either defibrinated or taken into sodium citrate solution according to the Rous-Turner technic, and were preserved as sterilely as possible at various temperatures. It was found that in the defibrinated preparations kept at 8 C. the reticulation would persist for from three weeks to a month. In defibrinated blood kept at body temperature, the reticulations steadily decreased after about eighteen hours, and had all disappeared after seventy-two hours. This may give some hint of the duration of reticulation in a circulating erythrocyte. The results with the Rous-Turner preparations were very variable, and in many instances the addition of the citrate solution at once markedly reduced the number of erythrocytes showing reticulation. Reticulated forms, however, were found in such preparations preserved in the icebox for one month. During the period of preservation, especially in the case of defibrinated rabbit's blood preserved at 8 C., there develop in an increasing number of erythrocytes one or more small refractile granules, which appear crimson when the preparation is vitally stained with brilliant cresyl blue. These are probably identical with the "substantia metachromatica" of Cesaris-Demel, and their development during in vitro preservation favors the view that they are a degeneration phenomenon.

Water Intoxication

DR. LEONARD G. ROWNTREE, Rochester, Minn.: Larson, Weir and Rowntree observed patients with diabetes insipidus who developed headache, nausea, asthenia, incoordination, marked sweating and, in one instance, mild subcutaneous edema, on the forcing of water subsequent to the administration of pituitary extract. Water intoxication was produced in dogs through the administration of large quantities of water by stomach tube subsequent to subcutaneous administration of extract of the posterior lobe of the pituitary gland. Large quantities of water at hourly intervals, 50 c.c. per kilogram of body weight, subsequent to 3 c.c. of pituitary extract, resulted regularly in the development of asthenia, restlessness, frequency of urination, diarrhea, nausea, retching, vomiting, tremor, salivation, muscle twitching, ataxia (tonic and clonic), convulsions, frothing at the mouth, stupor and coma. Death ensued when water administration was continued after the onset of convulsions, whereas complete recovery resulted within twelve hours in a large proportion of the animals if no more water was given.

Water intoxication has since been induced in various animals without the use of pituitary extract. In dogs, administration by stomach tube of 50 c.c. per kilogram every half hour results regularly in the appearance of nausea, vomiting, salivation, convulsions, stupor and coma, within from four to eight hours, and death ensues if water administration is continued after the onset of convulsions. Cats, rabbits and guinea-pigs are similarly affected by water. This intoxication results from the ingestion of ordinary drinking water or distilled water (from block tin or glass) irrespective of its temperature. Although the quantities of water given are excessive, the amount absorbed is definitely limited. The intoxication is not accompanied by significant changes in body temperature, by edema or by constant or marked changes in blood volume. The blood pressure is somewhat increased, and may reach as high as 200 mm. of mercury during the convulsions. Intracerebral pressure in one experiment was found to be increased to an amount corresponding to that of 35 cm. of water. This increase was not proportionate to or parallel to increase of blood pressure.

The convulsions are cerebral in origin and of extreme violence at times, usually lasting from one to ten or fifteen minutes. They may be tonic, but are usually clonic in character and are likely to recur at intervals. In the interim, the animal presents a state of stupor or coma with marked muscular flaccidity, extreme asthenia and abject helplessness. Hypertonic salt solution administered intravenously after the early evidence of toxicity prevents, as a rule, the onset of convulsions and coma. Necropsy reveals no gross changes.

It is of more than passing interest to learn that all of the symptoms of uremia can be experimentally induced by excessive water intake. An increase in cerebral pressure is unquestionably concerned etiologically in water intoxication. The evidences of intoxication disappear rapidly on the intravenous administration of hypertonic salt solution. The relation of water intoxication, if any exists, to uremia, eclampsia and epilepsy is not clear as yet.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, 1922, **23**, No. 5

*Nephritis in Children. G. Boyd, Toronto.—p. 375.
*Eczema in Breast-Fed Infants as Result of Sensitization to Foods in Mother's Dietary. W. R. Shannon, St. Paul.—p. 392.
Sitting-Height and Stem-Length in Private School Boys. H. Gray, Boston.—p. 406.
*Presence of Formic Acid in Urine of Infants and Older Children. M. D. McNeal, Rochester, Minn., and C. J. Eldridge, Chicago.—p. 419.
*Prophylactic and Therapeutic Value of Pertussis Vaccine. G. R. Davies, Syracuse, N. Y.—p. 423.
Chlorin Content of Cows' and Goats' Milk and Formulas Commonly Used in Infant Feeding. W. R. Sisson and W. Dennis, Boston.—p. 431.
*Respiratory Obstruction Resulting in Death. J. W. Bruce and S. Graves, Louisville, Ky.—p. 438.

Nephritis in Children.—An attempt was made by Boyd to determine the functional pathology of the nephritides in children. Infections, often apparently insignificant, were the most important etiologic factors in a series of twenty-six cases, tonsillitis occurring in 42.3 per cent. Cases of nephritis in childhood are divided by Boyd into (*a*) acute glomerulonephritis, (1) resolving, (2) nonresolving; (*b*) chronic glomerulonephritis; (*c*) nephrosis. The acute cases which recover are differentiated from the nonresolving type, by: (*a*) better response to renal function tests; (*b*) steady and rapid improvement clinically, and (*c*) rapid diminution and complete disappearance of the albuminuria. The chronic cases differ in the history of past symptoms and signs attributable to the kidney, especially nycturia, in the presence of more numerous casts in the sediment. Relapses occur frequently in the more severe cases, and of themselves justify a bad prognosis. Tests of renal function give invaluable aid in determining the prognosis and line of treatment. The concentration test and the determination of the blood nitrogen constituents furnish the most reliable data. Consideration of the response to functional tests coupled with clinical observation, enables one to foretell fairly accurately the outcome in individual cases. Administration of calcium salts, particularly the lactate, is of definite value in clearing up the edema. Pathologically, the most common lesion in the acute cases is a glomerulonephritis of the intracapillary type, accompanied by more or less degeneration in the cells of the convoluted tubules. The chronic cases showed the same lesions as the acute cases plus scarring and fibrotic changes. In the nephrotic case, tubular changes predominated.

Eczema Result of Sensitization to Foods.—The cases of eczema reported by Shannon occurred in either exclusively or essentially breast-fed infants. Treatment was mainly dietary. Recourse was had to external applications as a supplementary treatment in most cases. Several cases had shown no improvement during a preliminary period of external therapy alone. Dietary treatment consisted in the removal of offending foods from the dietary of the mother and patient or their limitation. It was guided by the results of cutaneous protein tests performed on the infants. The technic of the tests was that described by Walker, with the exception that the infant's back was used instead of the forearm. Interpretation of the positive reaction was based on the occurrence of an erythema at the site of the test, as well as a wheal.

Formic Acid in Urine of Children.—Formic acid was found by McNeal and Eldridge in the urine of ten infants and nine older children suffering from various diseases. The urine in all cases was negative to copper reduction tests. The method of Autenrieth for the determination of formic acid in the urine was used.

Value of Pertussis Vaccine.—Although it appears that the individual child responds differently to the pertussis vaccine, Davies' experience shows that the duration of the disease is shortened by its administration. Paroxysms were lessened in severity and duration, and whooping and vomiting were alleviated.

Enlarged Thymus Causes Early Death.—Bruce and Graves relate the case of a boy, aged 4 months, whose illness dated from the day after his birth when his mother noticed that his breathing was more noisy than normal. He was not cyanotic and did not seem to be in distress. This noisy breathing became more and more pronounced. He had been cyanotic only once, for about five minutes, when he seemed to strangle. An enlarged thymus was the cause of the trouble. He was not benefited by the roentgen-ray treatment. About one week before his death the respiratory difficulty became worse. About forty-eight hours before his death a roentgen-ray treatment was given and shortly after this, his symptoms became greatly exaggerated and continued so until his death. The necropsy confirmed the enlargement of the thymus.

American Journal of Hygiene, Baltimore

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Inheritance of Duration of Life in Man. R. Pearl, Baltimore.—p. 229.
Original Diagnostic Culture for Determination of Virulence of Diphtheria Bacilli. L. C. Havens and H. M. Powell, Baltimore.—p. 234.
Certain Correlation Factors of 1918 Influenza Epidemic. C. E. A. Winslow and C. C. Grove, New Haven, Conn.—p. 240.
Production of Hemolysins and Hemagglutinins in Domestic Fowl. R. R. Hyde and C. E. Bailey, Baltimore.—p. 246.
Control of Hookworm Disease. XI. Vertical Migration of Infective Hookworm Larvae in Soil (Preliminary Report). F. K. Payne, Baltimore.—p. 254.
Resistance of Different Hosts to Experimental Trypanosome Infections, New Method of Measuring Resistance. W. H. Taliaferro and L. G. Taliaferro, Baltimore.—p. 264.

American Journal of Roentgenology, New York

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Roentgen-Ray Evidence of Abdominal Small Intestinal States Embodying an Hypothesis of Transmission of Gastro-Intestinal Tension. R. W. Mills, St. Louis.—p. 199.
Conception of Chest Roentgen-Ray Densities Based on Study of Granite Dust Inhalation. D. C. Jarvis, Barre, Vt.—p. 226.
Roentgen-Ray Technic for Demonstration of Small Pneumothorax. J. C. Thompson and N. Barlow, New Haven, Conn.—p. 235.
Value of Roentgentherapy in Dermatology. G. M. Mackee and G. C. Andrews, New York.—p. 241.
Roentgen-Ray Treatment of Diseases of Skin. H. H. Hazen, Washington, D. C.—p. 247.
Superficial Malignancies. C. F. Bowen, Columbus, Ohio.—p. 255.
Persistalsis of Colon. P. M. Hickey, Detroit.—p. 260.

American Journal of Syphilis, St. Louis

April, 1922, **6**, No. 2

Comparative Clinical Observations on Involvement of Nervous System in Various Phases of Syphilis. J. H. Stokes and A. R. McFarland, Rochester, Minn.—p. 169.
Maryland State Department of Health Venereal Disease Clinic. A. G. Rytina, Baltimore.—p. 185.
*Intraspinal Therapy in Neurosyphilis. J. A. Fordyce, New York.—p. 198.
Practical Observations on Syphilis. II. H. H. Hazen, Washington, D. C.—p. 204.
Diagnosis and Treatment of Primary, Secondary, Latent and Tertiary Syphilis: Review of Literature. S. Feldman, New York.—p. 232.
*Case of Syphilis of Intestine. G. O. Scott and G. H. J. Pearson, Ottawa, Can.—p. 269.
Value of Neurological Examination in Syphilis. R. Hoyt, New York.—p. 273.
*Another Technic for Wassermann Test. E. H. Buttles, Burlington, Vt.—p. 280.
Absolute Diagnosis of Primary Syphilis. I. C. Sutton, Los Angeles.—p. 283.
Studies in Standardization of Wassermann Reaction. XXIV. Comparative Study of Tissue Extracts (Antigens) and Methods of Preparation. J. A. Kolmer and M. E. Trist, Philadelphia.—p. 289.
Studies in Standardization of Wassermann Reaction, XXVI. J. A. Kolmer and E. M. Yagle, Philadelphia.—p. 319.

Intraspinal Therapy in Neurosyphilis.—The value of therapeutic procedures in neurosyphilis, Fordyce states, should be appraised by the permanence of the results not only on the clinical signs and symptoms but also on the changes in the cytobiology of the spinal fluid and blood. If patients are not kept under observation for several years and controlled in this manner statements made by clinicians as to the effect of this or that method of treatment have little or no significance. Intraspinal treatment cures certain types of neurosyphilis in which intravenous treatment alone or when combined with spinal drainage has failed. Spinal drainage is of some value and may in certain cases facilitate the entrance of arsphenamin given intravenously. It more often fails to do more than reduce the cell count. It has little or no effect on the Wassermann reaction or the globulin content. It can-

not be endured for a sufficiently long time in chronic types of neurosyphilis to effect a cure.

Syphilis of Intestine.—A case is presented by Scott and Pearson with a suggestive syphilitic history, showing symptoms of generalized abdominal pain and tenderness, severe diarrhea, with the passage of liquid stools, containing mucus and pus, mild icterus, gradual emaciation, and cachexia, failing memory, and a persistently negative serum Wassermann. Recovery was rapid and complete, as far as concerns symptoms, under antisyphilitic treatment, substantiating a presumptive diagnosis of syphilitic enteritis.

New Technic for Wassermann Test.—Buttles uses a 0.5 per cent. suspension of washed human red cells in saline; clear blood serum of guinea-pigs obtained by cardiac puncture; two antigens, (1) the acetone insoluble lipoid antigen of Noguchi, prepared from human heart; (2) cholesterinized extract of human heart, alcoholic. The patient's serum is obtained by puncture of a vein, must be clear and is heated to 56 C. for twenty minutes. Rabbits are immunized against human erythrocytes by four intravenous injections followed by two or more injections intraperitoneally. When the serum titrates 800 or over the animal is bled from the ear or heart and the serum is dried on filter paper. Titrations of all reagents are made before use, nearly in accordance with the directions of Craig. Buttles claims for his technic, which he describes in detail, that the combining of erythrocytes, saline and complement, decreases the number of pipetting operations. Errors from inaccurate pipetting of small amounts of complement and of cell suspension are avoided, as well as errors from inaccurately graduated pipets. The relation between amount of cells and of complement is the same in all tubes. The first incubation furnishes a control against any nonspecific hemolysis.

Annals of Medical History, New York

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Nosography in Modern Internal Medicine. K. Faber, Copenhagen, Denmark.—p. 1.
Caspar Wistar, Junior. W. S. Middleton, Madison, Wis.—p. 64.
French School of Surgery in Reign of Louis Philippe. J. C. Da Costa, Philadelphia.—p. 77.
London Surgery in Early Part of Nineteenth Century. J. H. Gibbon, Philadelphia.—p. 80.
Dublin Medical School and Its Influence Upon Medicine in America. D. Riesman, Philadelphia.—p. 86.
History of Pulse Timing with Some Remarks on Sir John Floyer and His Physician's Pulse Watch. J. Rosenbloom, Pittsburgh.—p. 97.

Archives of Internal Medicine, Chicago

May, 1922, **29**, No. 5

*Study of Some Cases of Diabetes Insipidus with Special Reference to Detection of Changes in Blood When Water is Taken or Withheld. C. D. Christie and G. N. Stewart, Cleveland.—p. 555.
*Clinical Calorimetry. XXX. Metabolism in Erysipelas. W. Coleman, D. P. Barr and E. F. Du Bois, New York.—p. 567.
*Id. XXXI. Observations on Metabolism of Arthritis. R. L. Cecil, D. P. Barr and E. F. Du Bois, New York.—p. 583.
*Id. XXXII. Temperature Regulation After Intravenous Injection of Proteose and Typhoid Vaccine. D. P. Barr, R. L. Cecil and E. F. Du Bois, New York.—p. 608.
*Correlated Study of Indications for Tonsillectomy and of Pathology and Bacteriology of Excised Tonsils. L. Hambrecht and F. R. Nuzum, Santa Barbara, Calif.—p. 635.
*Blood Pigment Metabolism and Its Relation to Liver Function. C. M. Jones, Boston.—p. 643.
*Study of Hemoglobin Metabolism in Paroxysmal Hemoglobinuria. C. M. Jones and B. B. Jones, Boston.—p. 669.
*Studies of Cause of Pain in Gastric and Duodenal Ulcers. II. L. L. J. Hardt, Rochester, Minn.—p. 684.
*Seat of Emetic Action of Digitalis Bodies. R. A. Hatcher and S. Weiss, New York.—p. 690.
*Alkali Reserve in Pulmonary Tuberculosis. D. S. Hachen, Cincinnati.—p. 705.

Regulation of Water Excretion by Kidneys.—The regulation of the excretion of water by the kidneys was studied by Christie and Stewart in two cases of diabetes insipidus presenting the typical features, and in one case of polyuria of acute onset, apparently associated with a brain lesion. In the last case the polyuria disappeared permanently after lumbar puncture, but the patient eventually developed symptoms of mental derangement. No evidence was obtained that the condition was associated with any pathologic change in the kidneys. The various tests of efficiency of renal function gave normal results. When pituitary extract was administered the kidney showed normal power of concentrating the urine.

Metabolism in Erysipelas.—Observations were made by Coleman et al. on the basal metabolism of five erysipelas patients during the acute stage of the disease. During the fever, the metabolism is increased from 19 to 42 per cent. above the average normal basal. The increase in metabolism is roughly proportional to the degree of fever. A temperature of 40 C. involves a heat production of about 40 per cent. above the average normal. The change in rectal temperature is not always an accurate index of the change in average body temperature in erysipelas. The regulation of body temperature is similar to that observed in malaria during the stage of high continuous temperature. Both heat production and heat elimination are maintained at a high level. The heat lost in the vaporization of water constitutes from 23.6 to 33.4 per cent. of the total heat elimination. During rising, constant and falling temperatures the percentage of heat eliminated in the vaporization of water was greater than in normal individuals. No specific differences were found between the metabolism in erysipelas and in typhoid fever. Both fevers show approximately the same increase in the level of heat production for the same increase in body temperature. The protein metabolism is greatly increased in both diseases.

Metabolism in Arthritis.—The basal metabolism of four cases of acute and subacute arthritis was determined by Cecil et al. Three cases of acute and subacute arthritis showed no variation from the normal basal metabolism. One case of acute arthritis observed during a continuous temperature of 38.4 C. showed a basal metabolism 26 per cent. above the average normal level. Other observations on the same patient during afebrile periods exhibited a metabolism practically within normal limits. In this case there was a marked loss of body nitrogen during a period when the energy requirement was more than covered by a liberal diet. This indicates a toxic destruction of body protein. One case of gout showed little change in the level of basal metabolism. Four cases of severe arthritis deformans on the Landergren diet, very low in protein but high in calories, excreted from 2.6 to 3.6 gm. nitrogen per day, figures which are well within the normal limits. Three of these patients when tested in the calorimeter had a metabolism rate close to the average normal level. The respiratory quotients were normal, and there was no evidence of abnormal respiratory metabolism following the ingestion of large test meals of glucose and protein. The observations on arthritis deformans do not indicate that it is a disease of metabolism. If infectious in origin, it may be said that the infection is not accompanied by increase in basal metabolism or by toxic destruction of body protein.

Temperature Regulation After Injection of Proteose.—Calorimeter experiments have been made by Barr et al. on subjects after the intravenous injection of proteose and of typhoid vaccine. In five of these it was possible to observe the phenomena of chills. Observation has demonstrated that rise in body temperature is accompanied by increased heat production the amount of which corresponds to the degree of fever. It is found that this increase follows van't Hoff's law, which may be stated as follows: "With a rise in temperature of 10 C., the velocity of chemical reactions increases between two and three times." The phenomena of the chill following intravenous injection of proteose or vaccine are strikingly similar to those of the malarial paroxysm, the method of temperature regulation being almost identical.

Pathology of Excised Tonsils.—Of 218 persons said clinically to need a tonsillectomy, microscopic examination of their removed tonsils gave evidence of pathology in 93 per cent.; 7 per cent. were normal. Of these 218 persons, 63 per cent. gave a history of repeated "sore throats," 14 per cent. of frequent colds and were told that they had enlarged tonsils, 8 per cent. complained of mouth breathing, 8 per cent. of rheumatism and 7 per cent. of otitis media. Chronic lacunar (crypt) tonsillitis was found by Hambrecht and Nuzum occurred in 42 per cent.; chronic interstitial tonsillitis in 21 per cent.; chronic peritonsillitis in 6 per cent.,

gross or microscopic abscess in 10 per cent., and lymphatic hyperplasia as the only change in 14 per cent. Hemolytic streptococci were isolated in 96.1 per cent. of all tonsils and were the predominating organism in 85.4 per cent. In nearly every instance the same organisms were isolated from the adenoid tissue as from the tonsils of that patient. Avirulent diphtheria bacilli were isolated but three times in the entire series.

Blood Pigment Metabolism.—Jones asserts that increased blood destruction is accompanied by an increase of the bile pigments in the blood plasma and bile. Alterations in liver function, due to infection, new growth, cirrhosis, or even a profound anemia per se, are also accompanied by marked increases in bile pigment, both in the bile and plasma. Jaundice, in cases with liver damage, may be entirely due to an alteration in bile pigment metabolism, without the necessity of any accompanying obstructive process or increase in the normal process of blood destruction. In gallbladder disease the bile pigments in the duodenal contents are abnormally high, especially in those fractions containing the greatest concentration of bile from the gallbladder. Cases of uncomplicated cholecystitis show a greater concentration of bile pigments than cases of cholelithiasis. A presumable functional incapacity of the liver properly to metabolize hemoglobin, resulting from any cause resulting in liver damage, is accompanied by a lowered hemoglobin content of the blood. Such cases also show high bile pigment values in the plasma and bile. Owing to the frequent association of hepatitis with cholecystitis it is probable that the frequent accompaniment of a low hemoglobin content and an apparent anemia in chronic gallbladder diseases is due to an alteration in liver function.

Hemoglobin Metabolism in Paroxysmal Hemoglobinuria.—The experiments made by the Joneses suggest that a large part of the transformation of hemoglobin into bilirubin could occur normally in the blood vessels. Possibly the greater portion of this change takes place in the blood vessels of the liver because of the vascularity of this organ. The low bile pigments urobilin and urobilinogen can be formed in the liver, without the intervention of bacterial action in the intestine. Experimental evidence in man suggests strongly that the bulk of this pigment elimination is normally carried on by the liver.

Cause of Pain in Gastric Ulcer.—Hardt asserts that the pain in gastric ulcer is primarily due to the peristalsis acting on an irritable focus. All the medical measures by which gastric acidity is neutralized and suppressed also inhibit the gastric peristalsis and thus relieve the pain. Patients with uncomplicated duodenal ulcer do not experience pain during the period of digestive peristalsis, even in the presence of an adequate acidity. Active peristalsis of the "hunger type" is essential in the production of pain.

Seat of Emetic Action of Digitalis Bodies.—Hatcher and Weiss believes that digitalis bodies cause reflex nausea and vomiting through their direct action on the heart. The afferent impulses pass from the heart to the vomiting center in the medulla, by way of the sympathetic mainly, in part by way of the vagus, probably. Nausea and vomiting accompanying various circulatory disturbances, and more particularly those of cardiac origin, acquire a new interest for the clinician in the light of our results. A theory relating to the physiology of nausea and vomiting is submitted.

Alkali Reserve in Pulmonary Tuberculosis.—Although there is a decrease in the alkali reserve as the case advances, at no time, Hachen states, is there a marked "acidosis" in pulmonary tuberculosis.

Archives of Neurology and Psychiatry, Chicago

May, 1922, 7, No. 5

*General Symptomatology and Differential Diagnosis of Disseminated Sclerosis. B. Sachs and E. D. Friedman, New York.—p. 551.
Multiple Sclerosis: Location of Lesions with Respect to Symptoms. E. W. Taylor, Boston.—p. 561.
*Incidence of Multiple Sclerosis in United States Troops. P. Bailey, New York.—p. 582.
Lesions of Auditory and Vestibular Apparatus in Multiple Sclerosis. I. Friesner, New York.—p. 584.
*Studies in Pathogenesis of Multiple Sclerosis. G. B. Hassin, Chicago. —p. 589.
*Investigation of Axis Cylinder in Its Relation to Multiple Sclerosis. J. H. Leiner, New York.—p. 608.
*Multiple Degenerative Softening Versus Multiple Sclerosis. G. B. Hassin and P. Bassoe, Chicago.—p. 613.
*Mental Symptoms of Multiple Sclerosis. S. Brown II and T. K. Davis, New York.—p. 629.

Diagnosis of Disseminated Sclerosis.—According to Sachs and Friedman the diagnosis of disseminated sclerosis is warranted in the presence of a combination of any number of important signs enumerated by them as the result of their analysis of 141 cases, particularly if corroborated by the entirely negative character of the pupillary reactions and of the biologic tests. That there will be occasional pitfalls and errors may be conceded, but that is practically as true of disseminated sclerosis as it is of all other organic diseases of the central nervous system.

Incidence of Multiple Sclerosis.—Among approximately 3,500,000 men examined by the neuropsychiatric officers of the U. S. Army, a total of 69,394 cases of nervous and mental disease and defects were identified. Among 6,916 so-called organic cases, there were 511 cases of multiple sclerosis, a distribution average among organic conditions of 7.4 per cent. The average of foreign born in the whole group of organic conditions was 9.2 per cent., while in multiple sclerosis it was higher, namely, 12.7 per cent. Thirty per cent. of the patients with multiple sclerosos gave a family history of nervous diseases (as compared with syphilis of the central nervous system, for example, in which only 7 per cent. of the patients had a family history of nervous diseases); 10 per cent. gave a family history of mental disease.

Pathogenesis of Multiple Sclerosis.—A brief review is presented by Hassin of the histopathologic changes in multiple sclerosis studied on material from thirteen cases. The best known and the most notable characteristic features of multiple sclerosis are the so-called patches of sclerosis. Three pathologic features—apparently healthy fibers, fibers totally or partially demyelinated and fibers in a state of wallerian or secondary degeneration—occur not only in the patches themselves but also in parts of the central nervous system which show no visible patches. There are definite early changes in the form of widespread swelling of the myelin substance. The myelin alteration is an acute and early manifestation with the formation of a waxy patch. The glia undergoes changes later. The pathologic changes are primarily ectodermogenic, the mesodermogenic tissue participating in the alterations of the disease secondarily. Vascular and septal changes are present, but are accidental phenomena. Theoretically, it is possible to produce the changes of multiple sclerosis without concomitant changes in the connective tissue elements. The patches of sclerosis are not representative of territorial areas in relation to the arterioles, the venules and the perivascular lymph drainage. The lesions of multiple sclerosis cannot be produced experimentally either by interference with, or irritation of, the vascular supply of the spinal cord.

Condition of Axis Cylinder in Multiple Sclerosis.—Leiner states that the axis cylinder is damaged and may be destroyed. Frequently the axis cylinders survive the lesion and the primary edema is followed by a subsidence of the same. The medullary sheath is more seriously involved than the axis cylinder. It may be completely destroyed while comparatively well preserved axis cylinders remain. The medullary sheath may be preserved, at least in part. Leiner accepts Spiegel's conception that disintegration of the medullary sheath is accompanied by edema of the axis cylinder.

Multiple Degenerative Softening.—Recent histopathologic studies of the central nervous system have brought to light a group of cases presenting peculiar lesions in the form of scattered foci of degeneration. These foci or plaques differ microscopically from the patches of multiple sclerosis, encephalomyelitis and similar conditions and may be the cause of many indefinite clinical syndromes. These probably include many cases described as degenerative encephalitis, disseminated encephalomyelitis, malignant or acute multiple sclerosis, poliencephalitis superior of Wernicke, and other conditions. Generally speaking, they do not conform, either

clinically or pathologically, to any established morbid entity. The histopathologic examination of such a case Hassin and Bassoe believe justifies the conclusion that this is a disease group sui generis which they propose to designate as multiple degenerative softening in order to emphasize the contrast with multiple sclerosis. The most conspicuous pathologic features of the acute degenerative type are soft patches which grossly resemble the firm patches of multiple sclerosis, but which microscopically have a definitely different structure. The soft patches are associated with a diffuse degeneration of the brain substance.

Mental Symptoms of Multiple Sclerosis.—The mental symptoms of multiple sclerosis are divided by Brown and Davis into two groups: first, those which are primary and directly the result of the organic lesions; second, those which are incidental and secondary. In the first group they place euphoria, since it seems to be associated with the organic brain condition; likewise the mental defect symptoms, the occasional hallucinations of organic origin and the very rare confused states and Korsakoff's psychosis; also the occasional terminal states with delusions of grandeur. In the second group they place those transitory delusional states and depressions which appear to arise as a result of the condition of incapacity in which the patient finds himself. Here probably belong suicidal attempts and delusional trends accompanied by hallucinations often of only a few months' duration. There are still other delusional trends which are more like dementia praecox. However, marked distortion of thought and oddities of conduct which are so frequent in dementia praecox are not encountered in multiple sclerosis. While multiple sclerosis has symptoms in common with other organic brain diseases, the mental symptoms do not closely resemble these conditions. The clinical picture is not that of paresis nor that of cerebral arterio sclerosis. The symptoms are more like those occasionally seen in cases of brain tumor.

Colorado Medicine, Denver

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Pneumococcus Mastoiditis Without Otitis Media. L. T. Richie, Trinidad.—p. 95.
Treatment of Nontuberculous Infections of Chest Following Infection of Respiratory Tract. T. E. Carmody, Denver.—p. 97.
Relations of Infections of Upper Respiratory Tract to Nontuberculous Infections of Chest. M. D. Brown, Denver.—p. 100.
Restoration of Function in Hydronephrosis. O. S. Fowler, Denver.—p. 103.

Endocrinology, Los Angeles

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Suprarenal Insufficiency from Viewpoint of Clinician. C. E. de M. Sajous, Philadelphia.—p. 197.
*Influence of Endocrine System on Intra-Ocular Tension. J. Imre, Jr., Budapest, Hungary.—p. 213.
*Case of Retarded Mentality in Child, Treated by Organotherapy. M. J. Konikow, Boston.—p. 218.
Studies of Thyroid Apparatus. V. Significance of Comparative Mortality Rates of Parathyroidectomized Wild Norway Rats and Excitable and Nonexcitable Albino Rats. F. S. Hammett, Philadelphia.—p. 221.
*Use of Pituitary Extracts by Mouth in Treatment of Diabetes Insipidus. M. H. Rees and W. H. Olmsted.—p. 230.
Childhood Myxedema or So-Called Sporadic Cretinism in North America. M. B. Gordon, Brooklyn.—p. 235.
Effect of Body Tissues Other Than Thyroid on Basal Metabolic Rate. J. C. Aub and M. Taylor, Boston.—p. 253.

Influence of Endocrines on Eye Tension.—Imre has found that a disturbance in the balance of the endocrine system causes a disturbance in the intra-ocular tension. When the balance is restored the intraocular tension approaches or becomes normal. The glands that seem to play the principal rôle in the regulation are the hypophysis, thyroid, thymus and gonads.

Organotherapy in Retarded Mentality.—A case is described by Konikow of a girl, 14 years of age, who had manifested rapidity of growth and developed skeletal proportions suggestive of gigantism. Considerable mental retardation was evidenced. Obvious improvement in her scholastic record was seen while she was undergoing organotherapeutic treatment. Renewed retardation occurred when treatment was discontinued and there was improvement with its resumption.

Pituitary Extract in Diabetes Insipidus.—In a case of diabetes insipidus Rees and Olmsted found that by giving desiccated posterior lobe substance in salol coated capsules the polydipsia and polyuria were as effectively controlled as with hypodermic injections of pituitary extract.

Journal of Parasitology, Urbana, Ill

March, 1922, **8**, No. 3

Herpetomonas Muscae-Domesticae, Its Behavior and Effect in Laboratory Animals. R. W. Glaser, Princeton, N. J.—p. 99.
*Rat Tapeworm, Hymenolepis Diminuta, in Man. W. A. Riley, Minneapolis and W. R. Shannon, St. Paul.—p. 109.
New Myxosporidian Parasite of Channel Catfish, Ictalurus Punctatus. H. S. Davis.—p. 118.
New Rat Tapeworm, Schizotaenia Sigmodontis, from North America. A. C. Chandler and C. L. Suttles, Houston, Texas.—p. 123.
Microsporidian Parasite of Nematode. R. Kudo and D. C. Hetherington.—p. 129.
Poisonous Nature of White-Marked Tussock-Moth. H. H. Knight, St. Paul.—p. 133.
Study of Trypanosoma Americanum. R. W. Glaser, Princeton, N. J.—p. 136.
Fluke Infections and Destruction of Intermediate Host. F. C. Baker, Urbana.—p. 145.

Rat Tapeworm in Man.—Riley and Shannon relate the case of an infant, 9 months of age, who was suffering from an intestinal upset, with green, foul smelling stools. The bowel movement contained worm segments. Examination of the stool showed these segments in numbers. In addition to the intestinal upset, the baby had an eczema. The discharged worms agree in every respect with descriptions and specimens of *Hymenolepis diminuta*, except in scolex characters, which were not available. The child had been breast fed, and reared in a good home, in a cleanly environment. The clue to possible sources of infection was obtained when the mother stated that in mid-summer at the age of 7 months it had been allowed to creep on a grassy plot in the yard.

Military Surgeon, Washington, D. C.

April, 1922, **50**, No. 4

Measures for Development of Organization and Extension of Influence of Medical Reserve Corps Systems of Government. M. Ashford, U. S. Army.—p. 363.
Proposed New First-Aid Packet: Study from Medical Department Equipment Laboratory Medical Field Service School, Carlisle Barracks, Pa. J. P. Fletcher, U. S. Army.—p. 394.
War Typhus. A. M. Caccini, U. S. Army.—p. 403
Spontaneous Gangrene of Scrotum J. A. Hawkins, U. S. Army.—p. 419.
Military Use of Intelligence Tests. R. Sheehan, U. S. Army.—p. 423.
Laboratory Survey of Men Attending C. M. T. C. at Camp Jackson. W. C. Cox, U. S. Army.—p. 429.
Basal Metabolism and Basal Metabolic Rate in Disease. S. A. White, U. S. Army.—p. 433.
History of Military Medicine. F. H. Garrison, U. S. Army.—p. 448.

New York Medical Journal

April 19, 1922, **115**, No. 8

Endothermy. G. A. Wyeth, New York.—p. 437.
Constitutional Symptoms of Tuberculosis. A. K. Krause, Baltimore.—p. 441.
Diagnosis and Treatment of Mental Diseases in General Practice. F. X. Dercum, Philadelphia.—p. 446.
Pyogenic Infections of Digestive Tract and Their Biologic Treatment. W. P. Norman and A. Eggston, New York.—p. 449.
Reply to Certain Antagonistic Criticism of Nonsurgical Biliary Tract Drainage. B. B. V. Lyon, Philadelphia.—p. 456.
Causes of Loss of Vitreous Humor, Prolapse of Iris and Subsequent Membrane Formation in Cataract Extractions. S. McA. Payne, New York.—p. 466.
External Function of Pancreas and Its Bearing on Surgery of Pancreas. J. J. Gilbride, Philadelphia.—p. 470.
Pathogenesis of Diabetes Mellitus. D. W. Kramer, Philadelphia.—p. 472.
Diabetes Mellitus. A. Z. Wolodarsky, New York.—p. 475.
Diagnosis of Injuries of Soft Structure of Knee Joint. M. Strumsky, New York.—p. 477.
Congenital Deformities. C. E. Coon, Syracuse, N. Y.—p. 478.
Orthopedic Significance of Backache. J. K. Young, Philadelphia.—p. 480.

New York Medical Journal and Medical Record

May 3, 1922, **115**, No. 9

Urologist's Views on Syphilis. C. H. Chetwood, New York.—p. 501.
Two Fundamental Forms of Syphilis. F. X. Dercum, Philadelphia.—p. 504.
Diagnosis of Neurosyphilis. I. H. Pardee, New York.—p. 507.
*Diagnosis of Late Hereditary Syphilis and Lupus in Otorhinolaryngology. G. Portmann, Bordeaux, France.—p. 508.
Transmissibility of Syphilis in the Latent Stage and Insufficient Treatment of Early Syphilis. S. Feldman, New York.—p. 512.
Interpretation of Wassermann Reaction. S. Wallenstein, Baltimore.—p. 514.
Treatment of Gonorrheal Epididymitis. A. Ravich, Brooklyn.—p. 516.
Keratosis Blenorrhagica or Gonorrheal Keratosis. J. E. McDowell, Philadelphia.—p. 518.

*Infection of Kidney. W. C. Quinby, Boston.—p. 520.
Diagnosis and Therapy of Certain Lesions of Urinary Tract. L. Buerger, New York.—p. 523.
Urine Examination as Index of Renal Disease. H. W. Jones, Philadelphia.—p. 531.
Importance of Roentgen-Ray Examination in Early Diagnosis of Renal Calculus. W. T. Schmidt, Philadelphia.—p. 533.
*Contracture of Neck of Bladder. E. Beer, New York.—p. 536.
Worthwhile Tests of Kidney Function. M. F. Morris, Atlanta, Ga.—p. 538.
*Effect of Serial Administration of Silver Arsphenamin on Kidney. D. M. Sidlick and M. L. Mallas, Philadelphia.—p. 540.
*Spider Bite of Glans Penis Simulating an Acute Abdominal Condition. W. S. Woody, Hopewell, Va.—p. 542.
Report on Steinach Operation in Senility and Premature Senility. A. L. Wolbarst, New York.—p. 543.

Diagnosis of Late Hereditary Syphilis and Lupus.—Hybrid cases of syphilis and tuberculosis are most rare, for out of 50,000 observations in the course of fifteen years (1900-1915) at the otorhinolaryngology department of the University of Bordeaux, only five cases are found to be diagnosticated scrofulate de verole, without, besides, the assurance of the laboratory. But in four cases followed by Portmann since that time and which clinically seemed to be luposyphilitic hybrids, thorough laboratory researches have shown that one case was tuberculosis of a lupic form, and the other three were cases which proved to be late hereditary syphilis. Portmann insists on the importance of establishing an accurate diagnosis to avoid the disasters of inopportune therapeutics.

Infection of Kidney Always Secondary.—Quinby stresses the fact that infections of the kidney, whether acute or chronic, blood borne or ascending, are always secondary to a primary focus elsewhere than in the kidney itself. Therefore if a cure can be accomplished by means other than nephrectomy, it will be most assured after this primary focus has been adequately controlled.

Diagnosis of Contracture of Neck of Bladder.—The diagnosis of contracture of the neck of the bladder Beer states is suggested by the youth of the patient in whom the residual urine is found and when the rectal examination shows a small prostate. This suspicion is verified by the cystourethroscopic examination which shows a rather typical picture. The floor of the supramontane urethra (that is, the prostatic urethra between the bladder cavity and the verumontanum), shows directly above the verumontanum a relative falling away (cavity) to be immediately followed by a more or less thick raised bar which forms the inferior circumference to the fibrotic neck. In the typical uncomplicated case there is no lateral lobe enlargement, and this picture, together with the presence of residual urine, makes the diagnosis contracture of the neck which has been regularly disclosed by suprapubic exposure. In Beer's experience, lateral sphincteric obstruction has been rare.

Effect of Silver Arsphenamin on Kidney.—Observation of ten patients who were treated biweekly by Sidlick and Mallas and who were given eight intravenous injections of solution of the silver arsphenamin in doses of 0.2 gm. has convinced them that silver arsphenamin when given intravenously does not cause functional disturbance of the kidney. A nephritic condition, if present in a syphilitic patient being treated with synthetic arsenical compounds, has been acquired prior to treatment.

Spider Bite of Glans Penis Causes Abdominal Symptoms.—About fifteen minutes after being bitten on the glans penis by a spider while seated on a privy hole Woody's patient began to feel pain in his lower abdomen which in a few minutes spread upward to the upper abdomen and lumbar region. This rapidly became worse so that he was obliged to quit work. Fifteen minutes later he was suffering intense agony. The entire abdomen, especially the epigastric region, was hard, of a boardlike rigidity and very sensitive to pressure. The temperature was 98 F., pulse 62, the patient was drenched in a cold perspiration and the whole picture was one of intense suffering. There had been no nausea, vomiting or diarrhea. Retention of urine and complete absence of intestinal peristalsis supervened. These symptoms continued for four days when the patient had a good movement, and voided voluntarily for the first time since being bitten. The improvement in his condition continued to complete recovery. At no time were there any local signs at the site of the bite.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 22, 1922, No. 3199

Radium Therapy. R. Knox.—p. 631.
*Diagnostic Value of Lumbar Puncture in Cerebral and Spinal Hemorrhages. W. Harris.—p. 635.
Simple Goiter. R. McCarrison.—p. 636.
Detachment of Retina, Probably Due to Exposure to Light During an Eclipse. N. B. Harman and P. MacDonald.—p. 637.
*Method of Preventing Puerperal Infection. F. H. Whyte.—p. 638.
Valentine Mott's Aneurysm Needle for Ligature of Innominate and Subclavian Arteries. A. H. G. Doran.—p. 639.
*Trichotillomania Due to Threadworms. H. C. Semon.—p. 641.
Treatment of Influenza by Salicin. E. B. Turner.—p. 641.
Gonococcal Septicemia. J. A. Jenkins.—p. 641.
Acute Diffuse Nephritis in Children. A. R. Sami.—p. 642.

Diagnostic Value of Lumbar Puncture in Cerebral and Spinal Hemorrhage.—In five cases of acute cerebral apoplexy seen by Harris lumbar puncture showed the cerebrospinal fluid to be intimately mixed with an opaque with blood. In only two of these cases had cerebral hemorrhage been suggested as the cause of the mental confusion or coma, urema having been diagnosed in two of the cases, and lethargic encephalitis in the other. The latter patient lived for fifteen days after the rupture of a small aneurysm on one anterior cerebral artery. The extreme diagnostic value of blood mixed with the cerebrospinal fluid removed by lumbar puncture is emphasized.

Preventing Puerperal Infection.—The method described by Whyte depends on the fact that the germs present and unsterilizable on the walls of the lower genital tract and neighborhood may be passed over and not pushed higher up when making a vaginal examination or introducing the hand into the uterus by using specially devised apparatus consisting of two funnels and a repositor. Contact with the tissues is prevented by working inside of the funnel.

Trichotillomania Due to Threadworms.—A 6 year old boy was first noticed to pull out his hair when 3 years of age, and the habit had become severe enough to produce considerable disfigurement. The scalp was denuded mainly in the left frontal area, and epilation was mostly with the right hand, and at times done quite subconsciously, so that the child would simultaneously "play with a toy with his left hand and pull out his hair with the right." The habit was not practiced during sleep, and there was nothing to suggest that local pruritus in any way disturbed him. Latterly he had been turning his attention to his mother's hair. The scalp itself appeared to be somewhat deficient in sebaceous secretion, but was not otherwise abnormal or irritated, and the hairs which Semon epilated (without protest) showed no evidence of dystrophy or other nutritional disturbance. Inquiry elicited the fact that the appetite was exceedingly capricious, and that threadworms had been noticed in the stools, and treated ineffectively from time to time since the age of 18 months. Under anthelmintic treatment a complete cure was effected.

April 29, 1922, **1**, No. 3200

Influence of Industrial Employment on General Health. M. Greenwood.—p. 667.
*Excision of Head of Femur in Arthritis Deformans (Osteo-Arthritis) of Hip-Joint. H. Platt.—p. 672.
*Etiology and Treatment of Diabetes. A. Renshaw and T. H. Fairbrother.—p. 674.
*Fragilitas Ossium Associated with Blue Sclerotics in Four Generations. J. B. Alexander.—p. 677.
Recognition and Treatment of Minor Degrees of Fibrositis. T. Marlin.—p. 677.
Case of Osteitis Deformans. J. Lindsay and R. G. Gordon.—p. 678.
"Pernicious Anemia," Aplastic or Toxic. J. F. Rey.—p. 679.
*Local Application of Tuberculin. J. Crocket.—p. 679.
Abdominal Form of Influenza. D. A. Rice and B. O. Williams.—p. 680.

Excision of Head of Femur in Osteo-arthritis.—The operation described by Platt involves the following steps: (a) The removal of the overhanging mushroomed portion of the femoral head, leaving the stump of the neck of a reasonable length and with a slightly expanded upper end rounded off so as to simulate a new head; (b) the stump of the neck is

brought deeply into the acetabulum by fully abducting the limb; (c) the great trochanter, which has been detached as an integral step in the exposure of the hip-joint, is reattached to the femoral shaft at a lower level, thus acquiring a position of mechanical advantage. In removing the femoral head it is necessary to use a wide osteotome with a curved shaft in order to reproduce the rounded stump of the neck. The surface of the cancellous tissue thus exposed, after being smoothed off by filing, is thoroughly impregnated with Horsley's wax. The same procedure is carried out in the raw area left by the detachment of the trochanter. In addition, this latter area is covered by a small aponeurotic flap elevated from the vastus externus and turned upward, leaving bare the femur in the region where the trochanter is to find its new site. With regard to the approach to the hip-joint used in this operation, in Platt's experience the posterolateral route described by Brackett is the most adequate.

Bacteriology of Diabetes.—From the stools of diabetics a new organism (*B. amyloclasticus intestinalis*) has been isolated by Renshaw and Fairbrother which splits up starchy foods, forming oxybutyric acid, diacetic acid, butyl alcohol, and acetone. Sugar is also formed during this fermentation. Acetone has also been found in quantities capable of estimation in the stools of diabetics. The authors suggest that in diabetes carbohydrate fermentation occurs in the alimentary canal, forming abnormal products which probably so affect the glycogenic function of the liver as to lead to improper storage therein of the glucose from the alimentary canal during digestion. Definite lines of treatment include elimination or suppression of this organism.

Heredity of Blue Sclerotics.—Alexander cites a case of a boy, aged 7, who had blue sclerotics and who had had many fractures. The mother showed very deep blue sclerotics but had not had fractures. Her hearing was defective. The patient's two sisters also presented blue sclerotics, with, however, no history of fractures. The patient's mother's sister had sustained seven fractures during her life and had deep blue sclerotics. The grandmother and great-grandmother had both been the subjects of fragile bones and blue sclerotics. No further history of these phenomena was forthcoming in prevous generations.

Use of Tuberculin Ointment in Tuberculosis.—In addition to using tuberculin hypodermically in pulmonary tuberculosis, Crocket has for several years been using it locally—in gland cases, in lupus, and in abdominal tuberculosis particularly—with excellent results. The tuberculin is made up in an ointment, using anhydrous lanolin as a basis when lupus or adenitis is treated. It is made up in the form of a liniment when dealing with abdominal disease or pulmonary tuberculosis. The strength of the preparation varies according to the reactive power of the patient, the aim being to secure a definite reaction at the site into which it is rubbed, the reaction being indicated by a roughening, a reddening, or a papular eruption on the skin. The ointment or liniment should not be strong enough to produce a general reaction, as indicated by an increase of temperature, anorexia, or malaise. Kochs' old tuberculin T. or P. T., or preferably equal parts of both, is used. Crocket is convinced that tuberculin is the deciding factor. The results are lacking in most of the cases if it be omitted.

Indian Journal of Medicine, Calcutta

March, 1922, **3**, No. 1

Cases of Intestinal Worms. P. Gupta.—p. 1.
Inguinal Herinotomies Under Local Anesthesia (Apothesine). W. V. Kane.—p. 3.
Epidemic Dropsy. B. K. Bhowmick.—p. 6.
H-Ion Concentration of Blood. P. Ganguli.—p. 12.
Lamellibranchiate Molluska. E. Ghosh.—p. 20.
Pituitary Body. S. C. Sengupta.—p. 25.

Indian Medical Gazette, Calcutta

April, 1922, **57**, No. 4

Laboratory Records from Mesopotamia. No. 3. Cholera. F. P. Mackie and G. Traslet.—p. 121.
*New Form of Cutaneous Leishmaniasis: Dermal Leishmanoid. U. N. Brahmachari.—p. 125.
Dermal Leishmaniasis (Brahmachari). J. W. D. Megaw.—p. 128.
Normal Indian Infant During First Year. D. F. Curjel.—p. 128.
Tennis Elbow. L. Cooke.—p. 130.
*Epidemic of Anasarca in North Andamans. A. B. de Castro.
Two Cases of Tropical Abscess of Liver Rupturing into Abdomen. A. S. Fry.—p. 135.
Electric Ionization and Nose Operations. K. N. Pradhan.—p. 137.
*Diluted Phenol Injections in Hydrocele. R. E. Hoffman.—p. 138.
Case of Rat Bite Fever in Shillong. B. M. Gupta.—p. 139.
Accessory External Ear. P. Bose.—p. 139.

Cutaneous Leishmaniasis.—The usual result of antimonial treatment of kala-azar is: (1) cure; (2) apparent cure followed by a relapse, or (3) no improvement. A fourth result may follow and that is what happened in the four cases reported by Brahmachari. The visceral leishmania may be left behind with their virus so attenuated that they gave rise to a milder disease, namely, cutaneous leishmaniasis.

Epidemic of Anasarca.—De Castro reports on an epidemic of anasarca, with some gastro-intestinal disturbance, followed by syncope and death. The prominent and most constant symptoms were: swelling of feet, congestion of fauces, palpitation, breathlessness on exertion, hemaralopia, digestive disturbances, diarrhea or constipation, or blood or mucus in stools, swollen, spongy or bleeding gums, heaviness in legs, scanty high colored urine, highly acid, albumin rare; distressing dyspnea, dilation of heart; stomach enlarged. The onset of death is sudden and rapid. In nearly all cases it took place within two hours from onset of the cardiac dyspnea. A constant and fatal symptom was pain in the loins over one or both kidneys. Prominent postmortem conditions were: serious effusion in pleura, pericardium or peritoneum; dilated heart; kidneys enlarged and congested, in one case hemorrhage into the hylum; lungs engorged; stomach, large and small intestines showed a few points of inflammation. Bladder nearly always empty and contracted. Death in diastole. Mortality was about 16 per cent.

Phenol Injections in Hydrocele.—Hoffman has obtained good results in the treatment of hydrocele from the injection of from 1 to 8 c.c. of a mixture of phenol one part and alcohol two or three parts. It is said to be a most satisfactory treatment for all hydroceles not complicated by hernia or larger than an ordinary orange. Sacs even larger than this may be cured if they are thin, but greatly enlarged and thickened ones should be dealt with by open operation. The discomfort from the injection has usually been so small that the patient readily returns for another injection, but an interval of at least three months should be allowed.

Japan Medical World, Tokyo

April, 1922, **2**, No. 4

Leukocytosis Produced by Injection of India Ink Emulsion. K. Nagawo.—p. 93.
*Experimental Researches on Absorption of Fat in Stomach. S. Hirayama.—p. 101.
Action of Sodium Citrate on Phagocytosis of B. Influenzae. S. Amaya.—p. 106.

Absorption of Fat in Stomach.—In all animals examined, whether young or mature, certain hours after fat feeding, Hirayama found that the fat in the epithelium of the mucosa gradually began to increase, penetrating into the deep layer, showing that the epithelium of the stomach mucosa is able to absorb fat. This property differs a little according to the kind of animal, and even in the same stomach at different parts. In mammalia, absorption is the most active in the pyloric portion and in the cold blooded animal in the fundus portion. In mammalia, absorption begins about two or three hours after fat feeding, and in fourteen or fifteen hours it attains its height, completely returning to the former state in about twenty-four hours. In case of cold blooded animals the absorption commences about twelve hours after fat feeding, and in forty-eight or sixty hours the increase reaches its height, and in about eighty or ninety hours it is completely brought back to the former condition. Fat globules in the gland cells are increased almost parallel with the increase of fat in the epithelium, but in a smaller quantity.

Journal of Pathology and Bacteriology, Edinburgh

April, 1922, **25**, No. 2

Constitution of Normal Hemolysin of Ox Serum for Guinea-Pig Blood; Filtration Experiments and Conglutination. N. Yoshinare.—p. 153.
Bactericidal Action on Calf Lymph of Certain Triphenylcarbinol Dyes and Their Leuko-Compounds: Immunity and Hypersensitiveness Toward Vaccinia Variolae. M. Coplans.—p. 173.

Precipitins and Etiology of Serum Sickness. S. Wyard.—p. 191.
Gastric Glands in Extroverted Distal End of Vitelline Duct. G. W. Nicholson.—p. 201.
Histology of Destructive Changes in Iteric Livers. E. Schwarz, New York.—p. 207.
*Fat of Adipose Tissue in Malignant Disease. A. N. Currie.—p. 213.
*Effect of Thyroid Feeding on Bone Marrow of Rabbits. R. K. S. Lim, B. B. Sarkar and J. P. H. Brown.—p. 228.
*Complement-Fixation Tests in Diagnosis of Tubercular Infections. A. Sellers and E. N. Ramsbottom.—p. 247.
Proteolytic Enzyme of Bacillus Pyocyaneus: Inhibition Produced by Normal and Immune Serum. C. E. Dukes.—p. 258.
Mechanism Maintaining Negative Pressure of Pleura and Influencing Absorption. T. W. Wadsworth.—p. 266.
Wassermann Test with Prolonged Fixation at Icebox Temperature. Note on Tests with Bordet's Antigen. E. J. Wyler.—p. 271.
Case of Acute Ulcerative Endocarditis in Child Aged Three and a Half Weeks. J. E. M'Cartney.—p. 277.

Iodin Value of Adipose Tissue Fat in Malignant Disease.—A constancy in iodin value of normal adipose tissue fat from any part of the body was found by Currie. In malignant disease, there are marked differences in the iodin value of adipose tissue fat, these differences being dependent on the nature of the disease and the locality relation of the adipose tissue to the seat of disturbance. The fatty unsaturation finds its highest expression in local carcinomatous fat; fats local to sarcoma and chronic inflammatory lesions being intermediate between normal and carcinomatous as far as the iodin value expression of the change is concerned. A degradation relationship based on an iodin value classification was found to exist for adipose tissue fat.

Effect of Thyroid Feeding on Bone Marrow.—An attempt at a detailed cytologic examination of the bone marrow was made by Lim and associates. Young rabbits were used. Thyroid feeding invariably caused an increase of the polymorphonuclear percentage and a diminution of the small mononuclears, which is best marked in young individuals. In older animals, and on continuing the treatment, the polymorphonuclear percentage falls and may become subnormal, while the mononuclear percentage recovers and may be above normal. The actual number of polymorphonucleus is raised and lowered similarly to the percentage figure, but no decrease below the normal is ever found even after prolonged feeding. In the case of the small mononuclears, there is little or no actual decrease of their number, but in adults and after continued feeding their number may greatly exceed the normal. Daily doses of from 0.25 to 0.5 gm. per kilo of thyroid increase the total number of marrow cells, but larger doses may not do so; the qualitative changes are, however, always similar. Blood counts, red slightly and white more distinctly, are raised in young individuals only; no change occurs in older animals except after prolonged feeding when a slight fall may occur. The differential count shows a marked relative polymorphonuclear increase in the young, and a transitory and less marked polymorphonuclear increase in the adult. The mononuclear percentage shows a fall when the polymorphonuclear percentage rises, but it does not show any rise above the normal even after prolonged feeding. These changes are not so constant in animals given a heavy dose of thyroid. The significance of these changes is discussed, and it is suggested (*a*) that the marrow is stimulated to activity, resulting in the increased production of polymorphonuclears and small mononuclears, according to the age of the animal. The mononuclears, however, do not reach the circulation as such, since there is never any obvious increase in the number of blood mononuclears after prolonged thyroid feeding. They must, therefore, undergo development into another type, viz., erythroblasts and eventually erythrocytes. (*b*) That increased production in the marrow should lead to an increase of the corpuscles in circulation. This is not evident from the blood counts, but may be masked by some such factors as an increased destruction of cells, an increased blood volume, circulatory changes, etc. (*c*) That the marrow mononuclears are not responsible for the supply of mononuclears to the blood stream and therefore do not function as lymphocytes.

Complement Fixation Tests in Tuberculous Infections.—Observations were made by Sellers and Ramsbottom with the object of getting some evidence on the diagnostic value of complement fixation tests in children. The results agree, on the whole, with those of other observers. The authors are not satisfied that complement fixation tests afford a reliable means of clinical diagnosis in tuberculosis cases. They suspect that in some cases of doubtful or clinical tuberculosis, giving positive reactions, the diagnosis was fallacious. Apart from technical difficulties there are serious objections to the application of the test for clinical diagnosis. In tuberculosis fixation tests, the possibilities of group reactions cannot be disregarded. Also the positive results obtained by some authorities with nonspecific antigens, and the work of Forssmann and others on heterophile antibodies, suggest that a positive result is not always proof of a tubercular infection.

Journal of Tropical Medicine and Hygiene, London

April 15, 1922, **25**, No. 8

Hatching and Migration in Mammalian Host of Larvae of Ascarids Normally Parasitic in Cold-Blooded Vertebrates. R. J. Ortlepp.—p. 97.
*Vibriothrix Zeylanica (Castellani, 1904). I. Iacono.—p. 100.

Vibriothrix in Dysentery.—From a case of dysentery a pleomorphic germ was isolated by Iacono which microscopically showed the morphologic characters of a vibrio, a bacillus and a spirillum. From the results of the microscopic and cultural investigation, the author concluded that the organism is *Vibriothrix zeylanica* Castellani. This organism, as already noted by Castellani, Taylor, Anigstein, and others, is not pathogenic, but has a certain practical importance for the clinical bacteriologist, as on superficial examination it might be mistaken for a germ of the true dysentery group as its colonies on colored special medium such as MacConkey, Drigalski-Conradi, Endo, etc., are extremely similar to those of the dysentery bacilli, and it does not produce gas in any sugar medium.

Lancet, London

April 22, 1922, **1**, No. 16

Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 775.
*Experimental and Clinical Comparison of Therapeutic Properties of Different Preparations of Neo-Arsphenamin. H. H. Dale and C. F. White.—p. 779.
*Corpus Luteum in Its Relation to Toxemias of Pregnancy. R. L. M. Wallis and H. G. E. Williams.—p. 784.
Apparatus for Measurement of Small Quantities of Fluid. J. W. Trevan.—p. 786.
Rupture of Cesarean Section Scar. W. R. Mackenzie.—p. 786.
*Tests of Renal Efficiency. F. Kidd.—p. 788.
*Case of Large Urachal Cyst. G. H. Edington.—p. 791.
*Surgical Treatment of Cholelithiasis. J. O'Conor.—p. 792.
*Case of Carcinoma of Lung of Unusual Duration. A. J. S. Pinchin.—p. 792.
Case of Ectopic Gestation Complicated by Suppurative Appendicitis. M. E. Landau.—p. 793.

Comparison of Therapeutic Action of Different Preparations of Neo-Arsphenamin.—The chief conclusion reached by Dale et al. is that the determination of the therapeutic action of neo-arsphenamin on mice infected with trypanosomes is, at least, a very valuable index, if not an accurately quantitative measure, of the therapeutic activity of different samples on syphilis in man. The method has, accordingly, been put into routine use in the Medical Research Council's Department of Biological Standards at Hampstead, an occasional check of therapeutic activity being thus imposed, in addition to the regular testing of every batch of such products for absence of undue toxicity.

Relation of Corpus Luteum to Toxemia of Pregnancy.—From the corpus luteum a chemical compound has been isolated by Wallis and Williams which produces necrosis and other changes in animals very similar to those found in the toxemias of pregnancy. This substance is not present in the placenta nor in a hydatidiform mole. The overproduction of this toxic substance is said to be the cause of the toxemias of pregnancy, and the results emphasize the important functions of the corpus luteum in pregnancy. The presence of a hypercholesterolaemia, i e., an excess of cholesterol in the blood in pregnancy—is significant, especially as the increase occurs about the fourth month and at a time when the corpus luteum is most active. The blood remains charged with cholesterol until a varying period after labor. In eclampsia much higher figures for cholesterol are

found than in normal pregnancy. Further, it has been shown that injections of corpus luteum extract increase the cholesterol content of the blood. In the authors' opinion the presence of excess of cholesterol is of great significance, and they suggest that it represents an attempt on the part of the body to neutralize the toxic substance elaborated by the corpus luteum. The results of these investigations throw light on the association of activity of the corpus luteum with many of the clinical manifestations of pregnancy, and further form the basis of a new test for pregnancy.

Indigocarmin Test of Renal Efficiency Best.—Kidd considers the indigocarmin test of renal efficiency the test *par excellence;* and in surgery he believes that two classes of tests will survive the probation of time and experience—namely, the dye tests (indigo and phthalein), and the blood-urea and urea-concentration tests for prostatic and doubtful bilateral kidney disease. Kidd advises that no surgeon should operate on kidneys and prostates who has not had a good clinical training in the use of tests of renal efficiency.

Urachal Cyst.—In the case reported by Edington the points of special interest were: the history of digestive disturbance as evidenced by sialorrhea relieving the feeling of weight; the very spare condition of the patient, and the slowness of micturition. As regards the cyst itself, although of large size, measuring 13 by 9 cm., it had not formed any troublesome relationships with or attachments to any of the neighboring viscera. Removal was therefore not only possible but comparatively easy. Another interesting point is that, without there being any communication with the interior of the bladder, the fluid contained urea. The difficulty in bringing together at the close of the operation the irregularly divided peritoneum has been noted by other operators.

New Cholecystectomy.—O'Conor describes in detail a method of cholecystectomy which he says is simple in execution, which admits of operative rapidity in a zone where indecisive manipulation is likely to wind the patient, which reduces hemorrhage to a minimum, and which, from start to finish, gives the operator mastery of the situation.

Carcinoma of Lung.—The case described by Pinchin is of interest from two points of view: first, the length of the history—four years from the first symptom; second, the facts that the man had been under the observation of so many physicians at hospital and elsewhere, that the diagnosis of tuberculosis was allowed to rest, and that a diagnosis of neoplasm was apparently entertained.

Medical Journal of South Africa, Johannesburg

March, 1922, **17**, No. 8

*Splenic Abscess. A. F. Wallace.—p. 155.
Case of Urticaria. Sensitive to B. Diphtheroid and Staphylococcus Albus. R. L. Girdwood.—p. 157.
Latent Sinusitis. H. Bodkin.—p. 158.

Abscess of Spleen.—Forty-nine cases of abscess of the spleen are reviewed by Wallace. Nineteen patients were operated on: the other thirty died outside the hospital and the condition was discovered at necropsy. Four of the patients operated on died. All the patients were South African natives. The typical history of a case is as follows: The patient, who has apparently been in good health, is suddenly taken ill with a high temperature, headache, and pains in the neck and body generally. This continues for two or three days, and the patient begins to feel better. His temperature may subside to normal and the headache and pains go. Then he complains of pain in the spleen and on examination the spleen will be found to be enlarged and tender. If the spleen does not rupture, which is the commonest result, it continues enlarging and becomes tympanitic. In a late case the spleen may practically fill the whole abdomen. The spleen appears to be invariably adherent to the abdominal wall and the abscess can be cut boldly into and drained. From a big abscess Wallace has removed as much as 8 pints of pus. An abdominal tumor which corresponds in position and shape to an enlarged spleen and which is tympanitic on percussion Wallace says is pathognomonic of this variety of splenic abscess.

Quarterly Journal of Medicine, Oxford

April, 1922, No. 59

*Reaction of Blood in Relation to Dyspnea. F. R. Fraser, J. P. Ross and N. B. Dreyer.—p. 195.
*More Remote Prognosis in War Nephritis. S. C. Dyke.—p. 207.
*Syphilis of Stomach. J. W. McNee—p. 215.
*Excretion of Potassium Iodid in Urine in Health and Disease: Its Use as Test of Renal Function. G. C. Linder.—p. 227.
Researches on Complement Fixation Reaction in Hydatid Disease. N. H. Fairley.—p. 244.

Reaction of Blood and Dyspnea.—Fraser et al. found that in cases of heart failure with valvular disease the reaction of the blood is more alkaline than normal. Dyspnea is found associated with alkalemia as well as with acidemia. Pronounced acidemia may be present without dyspnea.

Prognosis in War Nephritis.—From the facts presented by Dyke it is apparent that 70 per cent. of cases of war nephritis at all ages terminate in complete recovery before the lapse of twelve months from the onset. The proportion of cases so terminating in recovery is slightly higher under 35 than over. Of patients not fully restored to health by the end of twelve months from the onset, the great majority become chronic nephritics. The occurrence of clinical symptoms of "uremia" at the onset has no unfavorable significance as regards the later prognosis. In cases becoming chronic, there is a tendency for a fatal issue to be determined by circulatory or respiratory conditions. The proportion of deaths from pulmonary tuberculosis among patients in the chronic stage is high.

Syphilis of Stomach.—The case recorded by McNee illustrates the chief clinical and pathologic facts in the commonest variety of syphilis of the stomach which arises as a submucous gumma. A particularly interesting point was the discovery of abundant spirochetes in an actively developing part of the lesion. From a brief historic survey of the literature it is evident that the prognosis in such gummatous lesions of the stomach is good when antisyphilitic treatment is employed. The literature also shows that this is the most frequent form of an uncommon variety of visceral syphilis.

Excretion of Potassium Iodid in Urine.—The iodid test according to Linder is a reliable indication of nephritis when the excretion falls below 35 per cent. In certain cases of nephritis it is the only test of function which shows that there is renal damage. It is a sign of good prognosis in nephritis when the excretion remains unimpaired thoroughout; of fair prognosis when it recovers after being impaired, especially if this occurs after a short space of time; and of bad prognosis and of advanced structural damage when it remains indefinitely in the region of 25 per cent. A reduction of the output to 15 per cent. or less is a sign of very advanced progressive disease, and often foretells an early death. In certain cases it may be an aid in treatment, indicating a less advanced stage of recovery than can be recognized by the clinical signs and other function tests. In a few of Linder's cases there was a slight degree of iodism, but in no case was there any sign of deleterious effect on the kidneys, such as return of hematuria, casts, or edema.

Annales de Médecine, Paris

March, 1922, **11**, No. 3

*Pulmonary Congestion. F. Bezançon and S. I. de Jong.—p. 177.
*Tetragenus Osteo-Arthritis. A. Broca and M. Nathan.—p. 193.
*Tetragenus Septicemia. A. Coyon and J. Lavedan.—p. 209.
Pulmonary Sclerosis versus Fibrous Tuberculosis. Dumarest.—p. 219.
*Postsystolic Venous Pulse. P. Lechelle and M. Mouquin.—p. 232.
*Radiotherapy of Cancer. S. Laborde.—p. 237.

Congestion of the Lungs.—Bezançon remarks that this term is generally applied to all the manifestations in lungs and pleura which are neither well defined bronchitis, pneumonia or pleurisy. He classifies them as true congestion of the lung, acute broncho-alveolitis, and cortical pleuritis. The only true "congestion" is the sudden, rapidly fatal disturbance in alcohol, absinthe and hydrocyanic acid poisoning, snake bites, eclampsia, diabetes, heat stroke and freezing. The anatomic lesion is intense hyperemia in the lung, with actual hemorrhages. Cortical pleuritis is generally of tuberculous origin when it is more than briefly transient.

Tetragenus Osteo-Arthritis.—Broca and Nathan's six cases illustrate the variety of the clinical pictures which this disease may assume, in young and old. The lesions are of slow, torpid development, occasionally flaring up. The focus was cleared out and an autogenous vaccine used, with apparent cure to date in one case. In another, the fistula became infected and the vaccine soon lost its efficacy, but neoarsphenamin completed the cure. In other cases no benefit from this drug was apparent.

Tetragenus Septicemia.—The infection began with a large furuncle in the lumbar region of the young man, and the septicemia ran its fatal course in a month. The tetragenus was found in a pure culture. Some years before there had been a tuberculous abscess in the thigh.

Postsystolic Venous Pulse.—In the elderly woman with mitral stenosis the varicose saphenous veins showed a postsystolic venous pulse, which Lechelle seeks to explain.

Contraindications for Radiotherapy of Cancer.—Laborde discusses what we now can expect from roentgen and radium treatment of cancers, the sensitivity of different tissues and cancer structures, and the causes of failure and mishaps. Nevus cancers seem to be not only refractory but to be aggravated by radiotherapy with the technic applied to date. It seems that the presence of pigment in a cancer warns to refrain not only from radiotherapy in all forms but also from operative measures; Laborde emphasizes this fact, which does not seem to be generally known. Nothing but electrolysis can arrest the progress of these tumors, and this only when applied early. Resection and radiotherapy have always seemed to speed up malignant disease with pigmentation. Another contraindication emphasized is that with deep involvement of the wall of the esophagus or other organ, radiotherapy will only hasten the end by inducing perforation of the organ. Intense anemia and cachexia render the patient unable to stand the resorption of toxic products generated by the exposures. Metastasis, unless this also is amenable to the rays, should contraindicate radiotherapy. The retrogression of the principal tumor often speeds up metastasis, and thus only shortens life.

Archives des Maladies du Cœur, Etc., Paris

March, 1922, **15**, No. 3

The Mechanism of Asystolia. A. Moukhtar.—p. 113.
*Intermittent Acceleration of Sinus Rhythm. J. de Meyer.—p. 122.

Intermittent Sinus Irregularity.—De Meyer describes a special sinus arrhythmia marked by intermittent accelerated and normal pulsations, which has none of the features of respiratory arrhythmia. Orthodiagraphy confirms that the heart is exceptionally small and the clinical findings indicate hypothyroidism. Thyroid treatment tends to restore a more regular beat. He gives a number of electrocardiograms from such cases.

Archives de Médecine des Enfants, Paris

February, 1922, **25**, No. 2

*The Toxic Phenomena in Toxicosis. P. Rohmer and R. Lévy.—p. 65.
*Mongolism. Mathilde de Biehler.—p. 81.
*Absence of Hepatic Duct. P. Nobécourt and H. Janet.—p. 90.
*Familial Diabetes. P. Lereboullet, G. and J. Blechmann.—p. 94.
*Varicella and Herpes Zoster. Dumoutet.—p. 97.
*Hemolytic Jaundice in Children. J. Comby.—p. 99.

The Toxic Phenomena of Cholera Infantum.—Rohmer and Lévy report from the children's clinic at Strasbourg experiences which apparently establish that the intestinal walls of infants with toxicosis may become pathologically permeable for crystalloids and colloids, but that this permeability is not constant nor intense enough to explain alone the toxic phenomena of cholera infantum. The intestinal walls proved equally permeable in some others tested that were healthy or had other diseases, and in 3 of the severer cases of toxicosis the intestinal walls were not permeable. The 18 infants were tested by ingestion of saccharose or by ingestion of 10 to 20 c.c. of diphtheria antitoxin added to the first 200 gm. of tea fed to the infants with severe cholera infantum and the 6 controls, the blood examined before and sixteen to twenty hours later for the antitoxin units. From 1:300 before, it became 1:100 or from 0 it became 1:20. In 2 there was 0 before and after, and in 1 the figure before and after was 1:300. In 3 other infants with dysentery or severe dyspepsia there was no change, the figure 1:100 or 0 persisting unmodified. Tests with saccharose always paralleled these findings.

Mongolism in Children.—De Biehler's study of mongolism is based on 5 cases, all boys but one. Two were brothers. All were nervous and restless, differing from myxedema in this as well as in the nonresponse to thyroid treatment, and the appearance. Most mongolians succumb in early life to intercurrent disease. They are not all actual idiots, but they learn by imitation, especially writing, gardening, etc. The father or mother was tuberculous in 3 of the 5 cases; in another the mother was 42 and this was her eleventh child, and there had been three abortions. Thyroid treatment seems to hasten the general and mental improvement, as in one of her cases, but others have failed to note any benefit.

Jaundice from Congenital Malformation.—The child with congenital jaundice survived for seven months although necropsy revealed a total lack of any outlet duct from the liver.

Familial Diabetes in Children.—The fourth child in the family died at 7 in diabetic coma, nine months after the first symptoms of diabetes. The sixth child developed diabetes at 9, and it proved fatal in five weeks although the child had been frail for two or three years before but no glycosuria could be discovered. Fifteen days after an appendicectomy sugar appeared in the urine, up to 200 gm. in the twenty-four hours. The parents were healthy, with no history of diabetes.

Zona and Varicella.—Dumoutet is in charge of an isolated sanatorium for children, and there had long been no cases of chickenpox in the vicinity when five cases developed within three days. There had been a case of zona in a group of newly arriving children twenty days before.

Hemolytic Jaundice in Children.—Comby's review of recent literature confirms the comparatively good prognosis of primary congenital hemolytic jaundice. The acquired primary forms are graver. All medical treatment to date has failed, but repose for body and mind, nourishing food and hygiene may be usefully supplemented with splenectomy. The recoveries after splenectomy outnumber the cases in which it has failed to relieve. Calnet in 1917 had compiled 47 cured or improved in 54 cases of chronic jaundice with splenomegaly. Bénard mentions 5 deaths in his compilation of 48 cases. Before attempting splenectomy, radiotherapy might be given a trial; successful cases with it have been published by Benjamin, Parisot (1913) and Jona (1916).

Journal d'Urologie, Paris

March, 1922, **13**, No. 3

*Hemostatic Action of Radium. G. Marion.—p. 161.
*Phenolsulphonephthalein Test in Urinary Surgery. Tardo.—p. 167.
*Tuberculous Kidney-Lung Fistula. C. Roubier.—p. 195.

Hemostatic Action of Radium.—Marion says that he has found radium exposures a dependable means for arresting hemorrhage from tumors in the bladder or urethra. In the seven such cases he describes in detail the effect was prompt, and the tumors shriveled or they could then be destroyed with the electric current. Before this, any attempt at cystoscopy for local treatment had induced such profuse hemorrhages that it had to be abandoned. The hemostatic exposure was with 10 cg. introduced in the tip of a sound into the bladder, and left for twelve hours. His series includes one case of inoperable cancer of the bladder; the others were bleeding polyps.

The Phenolsulphonephthalein Test in Urinary Surgery.—Tardo contends that the findings with this test have the same clinical value as the Ambard index and surpass it in reliability and convenience. He gives nine tables showing the findings in detail in different types of cases among the 245 patients thus tested.

Tuberculous Kidney-Lung Fistula.—The latent tuberculosis of the right kidney had induced a perinephritis cold

abscess which had perforated into a bronchus. The vomica was the first sign of trouble. The subphrenic abscess was cleared out but the kidney disease was not recognized until too late for nephrectomy.

Médecine, Paris

April, 1922, 3, No. 7

Obstetrics and Gynecology in 1921. L. Devraigne.—p. 485.
*Colpotomy. J. L. Faure.—p. 495.
*Oxytocics. Commandeur.—p. 496.
*The Stump of the Uterus. Keiffer.—p. 502.
*The Modern Well Infants' Asylum. V. Wallich.—p. 506.
*Post Partum Intra-Uterine Injections. Potocki.—p. 511.
*Radium Treatment of Metritis. P. Descomps.—p. 518.
*Urinary Disturbance from Uterine Fibroma. L. Gernez.—p. 519.
*Retroversion of the Uterus. M. Deniker.—p. 523.
*Cancer of Body of Uterus. P. Guéniot.—p. 525.
*Age of Fetus. M. Duvoir.—p. 530.
*Salpingitis and Appendicitis. H. Duclaux.—p. 531.
*Vomiting of Pregnancy. V. Le Lorier.—p. 535.
*Oscillometer in Obstetric Practice. P. Balard.—p. 537.
*Masked Treatment of Syphilis. G. Sauphar.—p. 542.
*Albuminuria in the Pregnant. R. Daunay.—p. 544.

Colpotomy.—Faure remarks that incision of the posterior vagina, releasing pus at the lowest point, often arrests instantaneously the gravest clinical pictures from acute adnexitis. But the opening must be large, and allow passage of two drains, at least for the first few days. This is practically the only indication for colpotomy except for old accumulation of blood in the pouch of Douglas.

Oxytocics.—Commandeur ranks sugar first among the harmless oxytocics; it combats the inertia toward the close of labor, when the uterus musculature has used up its supply of glycogen. He has often used it to good advantage, but it does not always have an appreciable action. He gives quinin during the first stage of labor, and with retention after abortion, giving two cachets of 0.5 gm. with a thirty minute interval, and repeating one or two hours later. He adds that new research is necessary on ergot to find some way to give it that will avoid its present dangers. To date, he says, the only safe rule is not to give ergot as long as there is anything in the uterus. The action of this "king of oxytocics" is not an intermittent, rhythmical contraction, but actual contracture. Pituitary extract requires caution as the uterus reacts differently in different persons. In about 20 per cent. there is no response to it; in others a whirlwind of contractions follows. He never uses it unless the path is clear for delivery, and there is no disproportion between fetus and birth passage, and labor has stopped from pure inertia of the uterus. Then it can be given in a small dose, testing the susceptibility of the patient, unless heart disease with failing compensation, eclampsia, albuminuria or disease with high blood pressure contraindicates pituitary extract.

The Stump of the Uterus After Subtotal Hysterectomy.—Keiffer declares that it is remarkable that the cervix so seldom causes disturbance after amputation of the uterus. There may be necrosis or nervous metritis or infiltration of the parametrium with adhesions, or there may be contracture of the ligaments. Hot hydrotherapy and glycerin dressings are called for with infiltration of the parametrium, but contracture of the ligaments with radiating pain yields only to tepid hydrotherapy, sedative enemas at night and light massage, gently stretching the uterosacral, vesico-uterine and broad ligaments twice a week. If the cervix stump has to be removed, this requires access by both abdomen and vagina.

The Pouponnière.—Infants less than a year old that have to be separated from their mothers and fed artificially are cared for by the Woman's Entr'Aide Society in a special asylum managed on the principle that only healthy normal infants less than a year old are admitted. Every infant is isolated for three weeks after its admission, and any child that is taken sick is isolated at first and then sent elsewhere. Five of these institutions are already organized at Paris, and Wallich regards this form of infant asylum as great progress. The mortality has been only 3 per cent. among these little *séparés*. When the infants begin to walk and play with other children, then they can be boarded out with greater safety, and the pouponnière turns them out when they are a year old.

Postpartum Intra-Uterine Injections.—Potocki explains that when these injections become necessary, they require as scrupulous care as an operation. He describes the minute technic.

Radium Treatment of Cervical Metritis.—Descomp's invariable success in a limited experience has convinced him that two or three radium needle applicators inserted in the lips of the cervix is an excellent treatment for old chronic inflammation limited to the cervix. This is better than dilating the cervix to introduce an applicator, as any mechanical action aggravates the inflammation.

Urinary Disturbances with Uterine Fibromas.—Gernez recalls that a fibroma is liable to induce disturbances in the urinary apparatus like those from a gravid uterus. With functional urinary phenomena in women the genital apparatus should be examined with scrupulous detail. A fibroma in the uterus—possibly unsuspected—may be responsible for irritable bladder or retention. The latter is often associated with tenesmus, constipation and hemorrhages in these cases.

Surgical Treatment of Retroversion of Uterus.—Deniker advocates obliterating the pouch of Douglas to ward against recurrence after ligamentopexy. Whatever technic for shortening the ligaments is applied, he urges the abdominal route. This allows revision of the appendix and adnexa, and it also allows the obliteration of the pouch of Douglas, thus leaving no chance for the displacement to return. It is easily accomplished by suturing together the uterosacral ligaments.

Cancer of Body of the Uterus.—Guéniot contends that instead of thinking of cancer last, it should be the first thing to be excluded when consulted by women in or approaching the menopause when a drop or two of blood or irregular menstruation attracts attention. The exploratory curetting should include the entire mucosa, and all the débris should be examined. If the microscope reveals nothing suspicious of cancer, the scraping alone may cure.

Age of Fetus.—Duvoir has found that the age of the fetus in days after the third month corresponds to the figure obtained by multiplying its length in centimeters by 5.6. The age can be estimated even when only the femur, humerus or tibia is available, by adding the length of the bone to 8 cm. and multiplying by 5.6 for the femur and by 6.5 for the humerus or tibia.

Salpingitis Versus Appendicitis.—Duclaux recalls that salpingitis is almost always secondary to an abortion or gonococcus infection; the seat of the pain is lower than with appendicitis, and it is relieved by repose; it increases during the menstrual period and spreads downward. Palpation through the vagina is instructive, as with appendicitis the uterus is movable and moving it is not painful, while the reverse is found with salpingitis. Rectal palpation confirms the salpingitis tumor. Roentgenoscopy is instructive, as also the previous history of vague abdominal pains at times, and loss of appetite.

Uncontrollable Vomiting of Pregnancy.—Le Lorier urges the necessity for purging and keeping the woman in bed, feeding only with milk by the teaspoonful every fifteen minutes, and training in breathing exercises with the spirometer. Sometimes epinephrin helps; 5 drops four times a day, of the 1:1,000 solution. When these measures fail, isolation with an experienced and firm nurse is required; nothing allowed by the mouth for two or three days, supplying fluids by rectal drip, and keeping up the respiratory exercises plus inhalation of oxygen. The third day, scraps of ice, Vichy water and aromatized seltzer, and then milk, natural, fermented or flavored to taste, but only by the teaspoonful every fifteen minutes. If milk is not liked, gruels, meat extracts, sherbets or peptoned solutions can be used—all by the teaspoonful. Any food intensely desired by the patient should be allowed, even if it seems indigestible. Human or animal serotherapy has proved successful in some cases; serum from a normal pregnant woman should be given the preference. Injectable extracts of corpus luteum have also given good results. With a pulse permanently over 100, we should not delay too long before emptying the uterus in the most expeditious way.

The Oscillometer in Obstetric Practice.—During labor, the oscillometer applied to the pulse allowed constant supervision of the heart action and, with hemorrhage, warned when transfusion was necessary. It also distinguished between the flagging of the heart and obstetrical shock, and between the real and the apparent death of the new-born when life seemed absolutely extinct.

Masked Treatment of Syphilis in the Pregnant.—Sauphar remarks that when the husband insists on secrecy in regard to a history of syphilis, as the pregnant woman must have systematic treatment, extreme caution and tact are required of the physician. He can discover "intense anemia" requiring intravenous treatment, and the yellow tint of the neo-arsphenamin can be explained by "the addition of caffein to the saline" thus being injected. Calomel has always been the main reliance in masked treatment of syphilis, and Milian advises to prescribe eighty cachets containing each 1 cg. of calomel and 1 gm. of bismuth salicylate, one each day, before two of the meals, and repeating the forty day course after an interval of ten days. The physician can usually find some symptoms as an excuse for this treatment of "the sluggish liver." In this form the mercury is almost always borne well. Hemorrhoids, constipation, "necessity for sparing the stomach," may serve as excuse for administering a mercury suppository by the rectum daily for twenty days. Arsphenamin suppositories have not given encouraging results. During the intervals between the calomel courses, potassium iodid can be given in some preparation. The daily dose must correspond to 2 gm. of the potassium iodid. The physician must also guard the prescriptions, and impress on the druggist not to give information as to the formula. By connivance with some other member of the family, it may be possible to substitute some other prescription for the one actually written. The physician must constantly bear in mind that the aim is the safeguarding of a family hearth and the preservation of posterity. Every kind of ruse and falsehood for this purpose, Sauphar reiterates, is justified, provided that he can retain the woman's confidence throughout the pregnancy.

Albuminuria in the Pregnant.—Daunay describes a number of sources of error in examining the urine of pregnant women. Admixture of vaginal secretion may give the positive reaction for albumin. Fermentation of the urine is one of the other sources of error.

Paris Médical

March 4, 1922, **12**, No. 9

Syphilis in 1922. G. Milian and Brodier.—p. 173.
Prophylaxis and Cure of Syphilis. L. Queyrat.—p. 177.
*Syphilis in Rural Districts. Leredde.—p. 184.
Danger of Inadequate Doses. M. Pinard.—p. 187.
Bismuth Salts in Treatment of Syphilis. G. Milian.—p. 189.
Hidden Active Gonococcus Infection in Women. J. Janet.—p. 191.
Case of Reinfection with Syphilis. Galliet.—p. 194.
*Idiosyncrasy to Arsphenamin. Babalian.—p. 195.

Syphilis in Rural Districts.—Leredde emphasizes the unsuspected frequency of cases of chronic gastric ulcer and of thyroid disease for which syphilis is directly responsible, but is seldom thought of in this connection, especially inherited syphilis. He reviews the experiences of two country physicians in France who examined for syphilis in every chronic affection they encountered. In sixteen months one thus found inherited syphilis in 161 and acquired syphilis in 82 of the 524 patients thus examined. In 22 cases the syphilis in a new-born infant gave the first clue to the unsuspected disease in the family. Besides these 243 certain cases, there were 39 others in which acquired syphilis and 117 in which inherited syphilis was probable or possible. The other rural practitioner states that in the 79 homes in his district, syphilis is known in 35. This village of 1,300 souls is not on a main rail line. Leredde adds that too many physicians nowadays "are not yet etiologists." They treat a gastric ulcer, myelitis, nephritis, deformities and disease as they encounter them, without digging down to find the roots. The two country physicians mentioned had not been able to apply the Wassermann in more than a few of their cases, hesitating to impose the expense on the families.

Idiosyncrasy to Arsphenamin.—Babalian's description is of his own experience. On entering a room in which an ampule of arsphenamin had been opened, he always developed symptoms like severe hay-fever asthma. An attempt at desensitization with subcutaneous injection of 2 cg. induced a grave nitritoid crisis, arrested only by epinephrin: three intramuscular and two intravenous injections.

Presse Médicale, Paris

April 15, 1922, **30**, No. 30

Albumins in the Serum with Cancer. M. Loeper.—p. 321.
*Anaphylaxis in Psychopathies. J. Tinel and D. Santenoise.—p. 321.
Technic for Radium Treatment of Uterine Cancer. Lacassagne.—p. 323.
*Transient Immunity and Durable Immunity. A. Marmorek.—p. 324.

Anaphylaxis in Paroxysmal Dread, Mania and Epilepsy.—Tinel here presents evidence of anaphylactic shocks and upset in the vagus-sympathetic balance in the course of paroxysmally occurring dread, maniacal agitation and epilepsy. The blood seems to be feeling the effect of injury of an anaphylaxis type from invasion by toxins. At any time during the paroxysm, drinking 250 gm. of milk will bring on a hemoclastic crisis, but as soon as the attack is over, it is impossible to elicit the hemoclastic crisis further or at any time until the next paroxysm or epileptic seizure. The paroxysm or seizure is thus explained as the result of overlapping disturbances of humoral origin, probably of anaphylactic origin, and of upset balance in the nervous system.

Reasons Why Immunity Is Transient or Durable.—Marmorek recalls that the diseases which leave durable immunity are those that are caused by a filtrable virus, and those caused by sporozoa and spirochetes which pass through an invisible phase in their development. The conclusion seems inevitable that permanent immunity depends on the smallness, the ultramicroscopic character of the micro-organisms causing the disease. They are so small that they can enter the nucleus of the cell. The reaction of the nucleus to their presence is what constitutes immunity after the disease has been thrown off. This immunity seems to have nothing to do with antibodies, agglutinins, etc. These latter biologic products act only within the limits of humoral and phagocytic, and hence transient, immunity. But if we can run to earth the invisible phases of protozoa and spirochetes, they might be utilized in this stage for production of a vaccine. Judging by analogy, the spirochete of syphilis must have an invisible phase. It may prove possible, further, he says, to get the living nucleus outside of the cell, so that bacteria can act on it as the invisible virus acts on it inside the cell, and thus produce conditions allowing immunization by a vaccine.

April 22, 1922, **30**, No. 32

*Anaphylaxis to Ipecac. F. Widal, P. Abrami and Joltrain.—p. 341.
*Reconstruction of Upper Lip. L. Dufourmentel.—p. 344.
Curative Action of Mercury in Syphilis. L. Cheinisse.—p. 346.

Anaphylaxis to Ipecac.—Contact with emetin induced eczema in the man of 34 and handling ipecac induced asthma in the man of 55. Both were pharmacists, and this professional malady was cured in both by the usual desensitization procedures.

Reconstruction of Upper Lip.—The young woman's entire upper lip and the tip of the nose had been torn off by a dog bite, but Dufourmentel, with seven operations in the course of four months, reconstructed the face until the effect was perfect as can be seen from the illustrations. The first operation followed an hour after the injury. One illustration shows the deformity resulting when such injuries are allowed to heal spontaneously, as from a war wound.

April 26, 1922, **30**, No. 33

*Resection of the Sympathetic in the Neck. T. Jonnesco.—p. 353.
Radiology of Heart and Aorta. L. Delherm and R. Chaperon.—p. 358.

Cervicothoracic Sympathectomy.—Jonnesco's twelve large illustrations show the various steps for resection of the sympathetic as he performed this operation in treatment of angina pectoris. (Mentioned in these columns recently, pages 892 and 2094 of the preceding volume.) The entire cervicothoracic sympathetic has to be resected, he contends, to suppress the heart-aorta reflex of angina pectoris, and to modify the intracranial circulation.

Schweizerische medizinische Wochenschrift, Basel

April 13, 1922, **52**, No. 15

*Changing Tonus of the Uterus. O. Beuttner.—p. 357.
Pseudo-Appendicitis with Influenza. J. Dubs.—p. 363.
*Acute Necrosis of the Pancreas. R. Schweizer.—p. 366.
Psychology in Treatment of Neuroses. H. Meier-Müller.—p. 369.
Injury from the Use of the Fructulet. E. Baumann.—p. 373.

Changing Tonus of the Uterus Musculature.—Beuttner reviews the observations that have been published on the relaxing and contracting of the uterus in response to irritation from within and without. He has published himself some cases in which the nonpregnant uterus alternately contracted and relaxed during instrumental dilatation of the cervix, or the corpus relaxed while the lower segment contracted. The local distention of the corpus may be like a cupola, and this may entail perforation, or it may mislead to the assumption during curetting that perforation has occurred. The uterus may relax and stretch to such an extent from the irritation of a laparotomy incision that a pregnancy seems almost certain. This relaxation from extra-uterine irritation is particularly liable to occur with adnexitis and extra-uterine pregnancy. Patiently waiting, the uterus gradually subsides to its former shape and size, growing harder and paler. The anesthesia does not seem to be the cause of the relaxation of the uterus. The light and air streaming in, and the altered intraperitoneal pressure are enough to explain the change in the tonus of the uterus. He describes some extreme instances.

Pathogenesis of Acute Necrosis of the Pancreas.—Schweizer ascribes acute necrosis of the pancreas to some primary toxic action from gallstones, gastric or duodenal ulcer, alcohol or other source of poison. He has found some plausible primary source of the kind in all the cases of acute necrosis of the pancreas he has investigated. Among the arguments to sustain this view is the fact that an abscess in the pancreas runs a course like an abscess elsewhere; it does not entail acute necrosis. This assumption explains further the variability of hemorrhage in the pancreas, and the scattered fat necrosis; a toxin can be carried by the blood to multiple points which the pancreas ferments could scarcely reach.

Annali Italiani di Chirurgia, Naples

January, 1922, **1**, No. 1

Opening Lecture of Surgical Course. G. Pascale.—p. 1.
*Mesogastric Ulcers. R. Alessandri.—p. 13.
*Aneurysms in the Neck. G. Pascale.—p. 25.
*Radium Treatment of Mouse Tumor. N. Piccaluga.—p. 40.
*Present Status of Cysts in the Neck. De Gaetano.—p. 55.

Mesogastric Ulcers.—Alessandri concludes from about 100 operative cases that the special feature of these ulcers is their tendency to burrow deep and thus involve adjacent organs. There was diffuse peritonitis from perforation in four cases of ulcer on the lesser curvature and three on the anterior wall. Only four in this group were saved. The segmental resection may induce slight stenosis, but this and the interrupting of the course of the nerves and vessels never caused any disturbance in his cases nor in his research on dogs. The stomach seemed to be less liable to spastic phenomena after circular resection, and evacuation proceeded as promptly as in a normal stomach and more promptly than after gastro-enterostomy. The mediogastric resection evidently had rendered the stomach less sensitive to different stimuli inducing contraction, spasm of the pylorus, etc., and thus had warded off hyperchlorhydria and pains. Consequently he sees no reason for abandoning mediogastric resection for the longitudinal or step resection technic.

Aneurysms in the Neck.—Pascale reports four cases of traumatic aneurysm of a carotid artery, with or without involvement of the jugular vein, all cured by excision of the sac. His illustrations show the diversity of conditions encountered.

Action of Radioactive Emanations on Mouse Tumors.—In this preliminary communication, Piccaluga relates that the mouse tumors continued to grow and the animals all died in time, notwithstanding the treatment with radioactive emanations. However, the tumors all showed such characteristic modifications under the influence of the emanations, that it is possible that, with improved technic, a curative action might be realized. His tables and illustrations show enlargement of the spleen and leukocytosis as a constant effect of the emanation treatment. The cancer implants in animals previously emanation-treated developed much more slowly than in the controls, but only until effects of the emanations had worn off.

Cysts in the Neck.—De Gaetano classifies these cysts by the clinical anatomic and the histologic anatomic findings. His classification recognizes the embryonal factors in each of the various types, and this enables the surgeon to trace the cyst back to its farthest ramifications and thus insure against recurrence.

Pediatria, Naples

April 15, 1922, **30**, No. 8

*Bacilli of Typhoid Group in Cerebrospinal Fluid. G. Carenia and L. Auricchio.—p. 337.
Epidemic Encephalitis in Child, with Necropsy. E. Mensi.—p. 343.
Case of Parrot's Pseudoparalysis. G. Castorina.—p. 356.
Examination of Children's Stools. R. Vaglio.—p. 359.

Typhoid Bacilli in Spinal Fluid.—Typhoid or paratyphoid bacilli were found in the spinal fluid in 93 per cent. of fifteen children examined from the fifth to the thirtieth day of typhoid or paratyphoid. There did not seem to be any connection with the duration of the disease or its clinical form. In two children with symptoms suggesting encephalitis, the fluid contained typhoid bacilli although none could be cultivated from the blood.

Policlinico, Rome

April 10, 1922, **29**, No. 15

Bismuth in Treatment of Syphilis. C. Ducrey.—p. 473.
Multiple Stenosis of the Urethra. E. Bussa-Lay.—p. 481.
*Kidney Calculus After Nephrectomy. P. de Favento.—p. 484.
Vaccination Against Endemic Typhoid. M. Gioseffi.—p. 485.

Nephrolithiasis After Nephrectomy.—De Favento calls attention to the three cases he reports in which after removal of a tuberculous kidney a number of small calculi formed in the remaining kidney and were expelled. There had never been any tendency to lithiasis before.

April 1, 1922, **29**, Medical Section No. 4

*Asthma. C. Frugoni.—p. 179.
*Indicanemia and Insufficiency of the Kidneys. P. Marin.—p. 222.

Asthma.—Frugoni tabulates the results of tests of 25 different substances in 32 cases of essential asthma; 12 responded positively to certain animal or plant proteins. In one case nothing but rabbit's serum and hairs induced the asthma. The asthma was accompanied by a pronounced hemoclastic crisis in 4 of 5 tested for this; in a fifth case it probably occurred but was so fleeting it escaped detection. Guinea-pigs prepared with rabbit serum and beef serum and the next day injected by the vein with serum from the corresponding asthma cases died from anaphylactic shock, but not when they had been prepared with the human serum and then injected with rabbit or beef serum. Intravenous injection of serum from one of the asthma cases into a normal subject was followed by the appearance of a skin reaction to the same substances and extracts that gave the positive reaction in the donor. These substances further induced a hemoclastic crisis the same as in the donor. These instances of passive transmission of the state of anaphylaxis were in a healthy child, and in an asthma subject of unknown origin, injected with serum from a beef asthma case. The hemoclastic crisis which was evident, in his tests, from the first moment of application of the asthma-inducing substances until the attack occurred, is not a phenomenon of anaphylactic nature but a colloidoclastic crisis from protein shock.

Indicanemia and the Kidneys.—Marin tabulates the findings in regard to indican in blood and urine, the urea, non-protein nitrogen, and the Ambard index in 120 patients with various diseases and healthy controls. The variability of the factors responsible for production of indican and its retention, and the fluctuating findings, render indicanemia of little diagnostic import although hyperindicanemia suggests possible insufficiency on the part of the kidneys.

Riforma Medica, Naples,

March 20, 1922, **38**, No. 12

Iodized Tuberculin. A. Cantani.—p. 265.
Liver Abscess Cured by Emetin. G. Iannelli.—p. 267.
Bile Producing Function of the Liver. A. Barlocco.—p. 268.
Experimental Research on Herpes. R. Vegni.—p. 270.
Echinococcus Disease of the Lungs. G. B. Girotti.—p. 272.
*Undernourishment and Exophthalmic Goiter. H. Curschmann.—p. 273.
Recent Progress in Urologic Surgery. E. Aievoli.—p. 276.

Undernourishment and Exophthalmic Goiter.—Curschmann states that during the years of food scarcity from the war, the number of cases of exophthalmic goiter constantly declined, and the condition in the old cases constantly improved. As food conditions have been progressively improving since, the number of cases of exophthalmic goiter has been increasing to the prewar figures, especially among the well-to-do in his region. He wrote twenty-two physicians and surgeons throughout Germany to inquire their experience, and all report the same drop in the incidence of exophthalmic goiter. Deneke at Hamburg had 217 cases between 1909 and 1914 and only forty-two between 1915 and 1920. Kümmel operated on forty-eight in 1912 to 1915 and on twenty in 1916 to 1919. These and other data presented seem to establish that undernourishment checks the functioning of the thyroid. This suggests that fasting may prove an important adjuvant in treatment of exophthalmic goiter, like Allen's fasting treatment of diabetes. Not only meat but calories in general and fat in particular should be tentatively reduced, recording the metabolic findings.

Archivos Latino-Amer. de Pediatría, Buenos Aires

February, 1922, **16**, No. 2

*Protracted Slight Fever in Children. J. Comby.—p. 81.
Aplastic Anemia in Girl of 11. Eugenio Lasnier.—p. 90.
Amebic Dysentery in Children. A. Volpe and N. L. Bloise.—p. 98.
*Osteopsathyrosis. J. C. Navarro and J. Sánchez.—p. 110.
Tuberculosis of Adult Type in Girl of 10. V. Zerbino.—p. 116.
Albumin Milk in Enteritis. L. Velasco Blanco.—p. 121.
*Congenital Myatonia. G. Aráoz Alfaro.—p. 125.

Prolonged Slight Fever in Children.—Comby cites from the literature a number of cases in which children of all ages have had a temperature around 38 C. or 100.4 F. for months and even years. In Genevrier's case the child of 12 still has these daily fluctuations of temperature between 37 and 38 C., noted for five and a half years. Change of climate, resection of adenoids and appendix have not modified this "cryptogenous febricula." Comby protests against ascribing these prolonged febrile states, without apparent cause, to the growth. They can usually be traced to autointoxication from some hidden focus in the digestive tract or upper air passages or to thyroid instability. In this latter case, organotherapy is called for. The discovery of the hidden cause is the main thing, and often several factors are involved. He recently encountered an example of familial fever from fatigue. After a fatiguing railroad journey, the child's temperature was 38.5 C. and both father and mother had a temperature over 38. After a night's rest the temperature was normal in all. Comby reiterates that the assumption of "growth fever" is as unjustified as of "fever from teething," but there is no doubt of the existence of what Renault calls the *hyperthermie de fatigabilité* in young and old. Persons of the neuro-arthritic type seem to be especially predisposed to it.

Osteopsathyrosis.—The young infant described presents a typical case of fragility of the bones, plus hydrocephalus. Some improvement has been realized with lumbar puncture and treatment as for syphilis, although there is nothing to suggest syphilis in the family.

Congenital Amyotonia.—Aráoz Alfaro argues that the destructive lesion in the cord may be the result of various infections, including acute poliomyelitis and inherited syphilis. The same factors at different points of the cord may induce different clinical pictures, such as Little's disease or infantile diplegia.

Brazil-Medico, Rio de Janeiro

March 11, 1922, **1**, No. 10

*Treatment of Foot and Mouth Disease. O. Magalhães.—p. 117.
*Treatment of Tropic Pemphigus. J. P. Botelho Vieira.—p. 117.
*Visual Disturbance After Losses of Blood. A. Terson.—p. 119.

Treatment of Foot and Mouth Disease in Cattle.—Magalhães states that the antiserum for this disease he has been using on a large scale in prevention proved successful in 92.2 to 100 per cent. In his latest series of 257 experiences, 99.3 per cent. were successful. In treatment, nothing has been found effectual except copper sulphate by the vein. This has been given in 2,000 cases and with notable results, he says. Others have reported similar success with it in adjoining states.

Tropical Pemphigus.—Botelho Vieira reports excellent results from the use of chaulmoogra oil in treatment of pemphigus. The intramuscular injections on alternate days have to be kept up for some time; sixty injections were made in one chronic case before the cure was complete, and forty-five in another, described in detail. He emphasizes the contagious character of tropical pemphigus and its tenacity. Antimony and potassium tartrate may be effectual in the early cases, but only the chaulmoogra oil has proved capable of arresting the chronic form.

Visual Disturbances After Losses of Blood.—A similar article by Terson was reviewed Feb. 11, 1922, p. 466.

March 25, 1922, **1**, No. 12

*Treatment of Epilepsy. R. de Souza Lopes.—p. 141.
Minor Surgery. O. Ramos.—p. 145.

Treatment of Epilepsy.—Souza Lopes here discusses merely the accessory factors responsible for the epilepsy, the irritable motor and sympathetic systems, the toxemia, and the abnormal functioning of the endocrine glands. He describes the different signs of abnormal conditions in these various fields as the main problem in treatment of epilepsy.

Repertorio de Medicina y Cirugía, Bogota

January, 1922, **13**, No. 4

*Medical Education in Colombia. J. N. Corpas.—p. 179.
Action of Arsphenamin on the Eye. C. M. Pava.—p. 193.
*Hygiene in Colombia. L. E. Aconcha S.—p. 205. Conc'n.

History of Medical Education in Colombia.—The first practitioner was a Spaniard, who arrived in 1579, and the first medical teaching began in 1758 when the Colegio del Rosario was founded by the viceroy, but 1801 had arrived before an actual medical faculty was organized. The university was founded in 1826, and a medical society in 1873. This was officially recognized as the Academia Nacional de Medicina in 1890.

Hygiene in Colombia.—In concluding this long study of public health matters in Colombia, Aconcha remarks that "in no country of the world have the legislators and public health authorities passed so many laws and decrees to promote the welfare of the people as in Colombia. . . . The United States is the only country that has adopted the Colombian single and autonomous system of organization of the public health service." He cites figures showing the effectual yellow fever mosquito campaign at Buenaventura. Water casks of the Panama type were distributed gratuitously—rain water being the sole reliance for drinking water—and all open casks were destroyed and the proprietor fined. The campaign against hookworm has been waged for fifteen months with good results. It was found that 6,348 were infected of 7,786 barefoot laborers, but only 38 per cent. of the 264 that wore shoes. The coffee plantations seem to be the main foci of hookworm (93 per cent.).

Semana Médica, Buenos Aires

March 23, 1922, **1**, No. 12

*Extra-Uterine Pregnancy. E. Zarate, D. A. Rojas and Widakovich.—p. 453.
Functional Reactions of Stovain. J. A. Sánchez.—p. 466.
Pay Patients in the Public Hospitals. J. G. Ruiz.—p. 468.
Prophylaxis of Puerperal Eclampsia. M. Oxilia.—p. 469.
The Work of Dr. G. Rawson. N. Lozano.—p. 471.
Notes of Two Ophthalmologists at Paris. Adrogué and Gallino.—p. 477.
Sympathetic Ophthalmia. R. Argañaraz.—p. 479.
Case of Lymphoid Leukemia. I. Allende.—p. 485.

Extra-Uterine Pregnancy at Term.—The mother and child left the maternity in good condition about the usual time, although the fetus had developed to term outside of the uterus, the tubal-abdominal pregnancy having proceeded to term. The similar cases on record during the last twenty

years are compared with this. During the first few weeks there had been diffuse abdominal pains, and the movements of the fetus later were felt close to the surface of the abdomen, and induced pain. The false labor is dangerous for the fetus, and in this case was the signal for the laparotomy. The child has a few deformities but none pronounced. The neck is abnormally short and the face overlarge, and the right leg is a little short. It cried at once after extraction, and took the breast well, and the woman seems to have recovered without complications of any kind. Several illustrations show the placenta, fetal sac and child. The placenta and sac were detached in one mass, with 5 or 6 cm. of the right tube and the ovary, severing adhesions between clamps. There was scarcely any hemorrhage. The child weighed 2,860 gm. and measured 46 cm.; the chest measure was 35 and the biacromial diameter was 10 cm. At the age of 6 months he seems to be thriving normally.

March 30, 1922, **1**, No. 13

Projectile in Mediastinum. P. Barbieri.—p. 497.
*Hemostasis in the Nasopharynx. L. Samengo.—p. 499.
*Crossed Aphasia. Tiburcio Padilla.—p. 507.
Unofficial Medical Courses. P. J. Garcia.—p. 518.
Necessity for Organization of the Profession. N. Capizzano.—p. 523.
Present Status of Internal Secretions. F. Grieco.—p. 524.

Inflatable Bag for Hemostasis in the Nasopharynx.—Twelve illustrations show the parts and uses of Samengo's "pneumocompressor." It is mounted on a head frame which holds it automatically in place. This device for plugging the nasopharynx does not interfere with operations on the mouth and throat, as the supporting frame can be pushed to either side.

Crossed Aphasia.—Padilla analyzes the conditions which justify the diagnosis of crossed aphasia. He compares four cases from the literature with a case of which he gives an illustrated description. His patient was a righthanded young man with endocarditis lenta, left hemiplegia, and complete motor aphasia. The necropsy findings showed advanced pathologic conditions in the right hemisphere while the left was practically normal.

Siglo Médico, Madrid

March 18, 1922, **69**, No. 3562

*Lactic Acid in Stomach Content. Santiago Carro.—p. 281.
Present Status of Internal Secretions. G. Marañon y Posadillo.—p. 283. Cont'd.
Malaria in Spain. M. Sella.—p. 287. Cont'd.

Lactic Acid in the Gastric Content.—Carro explains that lactic acid is liable to be found in the stomach whenever there is retention plus lack of hydrochloric acid. These conditions may or may not be associated with cancer of the stomach, so that the presence of lactic acid is no criterion for or against malignant disease.

March 25, 1922, **69**, No. 3563

*Milk Protein Therapy. M. Marin Amat.—p. 307.—Cont'd.
Surgical Treatment of Ozena. J. M. Barajas y de Vilches.—p. 312.

Protein Therapy.—Marin Amat has been making subcutaneous or intramuscular injections of milk in 300 cases of eye disease. It is now his routine treatment for ocular infections, and he gives this treatment also for erysipelas, orchitis and peritonitis. He never injects more than 4 c.c., and he uses goat's milk as it happens to be more conveniently available.

Deutsche Zeitschrift für Chirurgie, Leipzig

March, 1922, **169**, No. 5-6

*Ascarid Abscess in Liver. E. Makai (Budapest).—p. 297.
Surgical Complications of Ascaridiasis. R. Girgensohn (Riga).—p. 309.
*Para-Articular Arthrodesis of Hip Joint. M. Kappis.—p. 316.
*Rare Forms of Ileus. W. Block.—p. 329.
*Sacral Anesthesia. A. Barbey.—p. 341.
*Rheumatismal Periosteitis. H. Reh.—p. 361.
Roentgen Stereography. R. Fieback.—p. 399.
Bile Peritonitis. F. Wagner.—p. 415.

Ascarid Liver Abscess.—The child of 7 had long been subject to ascaridiasis, and had been given treatment for ileus verminosus. Then came violent pains in the liver region, not resembling colic, and the liver was much enlarged. The abscess in the liver was resected and five living ascarids and several ova were found in it, and two ascarids crawled out of the operative wound six and nine days later. The abscess capsule showed that the ascarids responsible for the abscess must have been in the liver for several weeks before the santonin had been given. The abscess cavity had no connection with the bile passages, and Makai is convinced that the ova reached the liver by way of the blood or lymph.

Para-Articular Arthrodesis of Hip Joint.—Kappis reports fourteen cases of tuberculous coxitis in which he immobilized and strengthened the joint by implanting a bolt of bone and periosteum to fit between the trochanter and the crest of the ilium. The outcome justifies extensive use of this method, he says. A similar technic was applied to the shoulder in one case, but the implanted bolt fractured later.

Rare Forms of Ileus.—Block describes some cases and cites others from the literature in which there was complete obstruction of the bowel at more than one point, or complete and partial—a total of eight cases. The mortality is high, over 70 per cent.

Sacral Anesthesia.—Barbey comments on the comparative disregard of the sacral method for anesthesia, known also as the extradural or epidural method. He compares the experiences with it at various clinics, and in 146 cases in Landow's service. The technic is much simpler than nerve blocking, and the by-effects are much milder than with lumbar anesthesia. The anesthesia was complete in 91.8 per cent., and it failed only in 2 per cent.

Infectious Periosteitis.—Reh recalls that a primary acute infectious process in the periosteum is of rare occurrence, but the secondary form is very common. Multiple periosteitis is generally traceable to vascular anomalies.

Klinische Wochenschrift, Berlin

Feb. 4, 1922, **1**, No. 6

Mode of Action of Diuretics. A. Ellinger.—p. 249.
Pain in Diagnosis of Acute Abdominal Affections. F. Karewski.—p. 253.
Calcium Content of the Blood; Effect of Various Poisons Upon It. E. Billigheimer.—p. 256.
Chronic Duodenal Stenosis. H. Meyer.—p. 259.
Morphology of Duodenal Contents in Diagnosis. Langanke.—p. 260.
Congenital Obliteration Azoospermia. C. Posner.—p. 261.
Psychic Anomalies in Early Childhood. T. Gött.—p. 265.
Paroxysmal Tachycardia. S. de Boer.—p. 269.
Predisposition to Auricular Fibrillation. S. de Boer.—p. 269.
Acute Disturbances of Nutrition in Infancy; Possibilities of Bacillus Coli Serum. Langer and Mengert.—p. 270.
Portal of Entry in Ascaris Infection. Fülleborn.—p. 270.
Osteomyelitis of Thigh After Dental Treatment. Schultze.—p. 271.
*Roentgen Irradiation of Exophthalmic Goiter. Haudek and Kriser.—p. 271.

Roentgen Irradiation of Exophthalmic Goiter.—Haudek and Kriser, of the Vienna roentgen laboratory in charge of Holzknecht, discuss the practical results of roentgenotherapy in the treatment of exophthalmic goiter. Their observations cover 38 cases, in 12 of which the patients have been reexamined; 4 of these can be regarded as cured; 7 are much improved, and one is slightly improved. According to reports of large series in the literature, good results were secured in from 75 to 90 per cent. of the cases. Glaserfeld reports 110 deaths in a series of 2,032 operative cases—a mortality of 5.4 per cent. There have been scarcely any deaths following roentgen irradiation, and the few that have been reported seem to have been due in part to other complications. As for untoward sequels, nothing more than a slight browning of the skin need occur if proper care is taken. Some surgeons have mentioned finding adhesions apparently caused by "planless irradiation." On the other hand, Pfeiffer, Nemenow, Krause and Rave state explicitly that in their operations they have never found tissue changes, ascribable to irradiation, which made the operation more difficult. Many who have experimented with animals have found no such adhesions. The writers warn against giving the treatments too close together, as in many instances an increase of basedowian symptoms results. In several sudden deaths after strumectomy a persistent and at times unusually large thymus was found. Many surgeons recommend in such cases reduction of the thymus as well as of the thyroid, which has achieved good results in certain cases. Other surgeons advise irradiation of the thymus before the operation on the thyroid (Crotti). The roentgenologist will also naturally

irradiate a persistent thymus along with the thyroid. With exophthalmic goiter and uterine hemorrhage requiring irradiation, the goiter should be treated first, since otherwise exacerbation of the basedowian symptoms is liable. If the indications for the surgical intervention hold good after irradiation, the general condition of the patient will at least be improved, and there seems to be no doubt that the mortality from surgical operations has been materially lessened by antecedent roentgen irradiation.

Medizinische Klinik, Berlin

March 26, 1922, **18**, No. 13

*Trauma of the Brain and Operative Relief. Tilmann.—p. 393.
Reglementation of Prostitution. Grotjahn.—p. 395.
*Glycosuria Test for Beginning Pregnancy. Kamnitzer and Joseph. —p. 396.
The Headache of the Harried. H. Rehder.—p. 398.
*Cocain Poisoning. E. Pulay.—p. 399.
The Pupils in the Epileptic Seizure. G. Herrmann.—p. 399.
*Intracranial Serotherapy in Tetanus. E. Fränkel.—p. 401.
*Nonspecific Treatment of General Paresis. O. Fischer.—p. 402.
Prevention and Treatment of Cracked Nipples. L. Moll.—p. 403.
Lymphogranulomatosis. H. Stahr and I. Synwoldt—p. 404.
Practical Obstetric Questions. E. Runge.—p. 409.
Present Status of Arsphenamin Brain Fatalities. C. Hart.—p. 411.

Operative Treatment After Trauma of the Skull.—Tilmann regards all cases in which the lumbar puncture fluid shows high pressure or high albumin content, after an accident to the head, as confronted by the danger of epilepsy. Any findings in the spinal fluid suggesting the presence of a chronic inflammatory or reparatory process offer the chance of benefit from intervention at the seat of the injury, aiding in warding off or improving phenomena indicating irritation or a functional deficit. The earlier the intervention, the better the results are likely to be. The war wounds of the skull entailed epilepsy only in 10 per cent. of the cases in his service; others have reported 15, 40 and even 60 per cent. and Poppelreuter says that every injury of the brain entails epilepsy. Tilmann explains that traumatic epilepsy is not a disease but a symptom. Immediate removal of the cause arrests the symptom. In one case of scarlatinal encephalitis, fifteen epileptic convulsions pointed to the exact site of the focus. This was a patch of acute malacia, and it was removed by puncture, and drained, and there have been no further cerebral symptoms during the three years since. The malacia process is not generally classed with inflammation, but the effect may be the same. The war wounded in the head who have recovered from their disturbances have normal lumbar puncture fluids. He adds that no plastic operation should be attempted unless the lumbar puncture fluid shows normal conditions.

Early Glycosuria Test for Pregnancy.—Kamnitzer and Joseph announce an early test for pregnancy which, they say, is simple and reliable. Phlorhizin is injected into the gluteal muscles: 2 c.c. of a solution of 0.03 gm. in 30.5 c.c. of distilled water to which 0.015 gm. procain has been added, and the whole boiled up; 2 c.c. of this represents 0.002 gm. of phlorhizin. In the healthy it takes 0.01 gm. of phlorhizin to induce glycosuria. A negative response, they say, positively excludes pregnancy, either normal or extra-uterine. The findings were conflicting only in 6 of 300 women tested, including 213 control cases of various affections, 67 pregnant, 17 who had just aborted, and 3 with tubal pregnancies. The test is applied fasting. The bladder is emptied, and 200 c.c. of an unsweetened fluid is ingested, and the same amount is ingested anew half an hour after the injection. The woman urinates three times at half hour intervals. The positive reaction is the black tint appearing at once on boiling as the Nylander test is applied. Certain drugs give the positive reaction also. Among the cases cited is that of a young woman six weeks after her last regular menstruation. The urine reaction was strongly positive in half an hour. Three weeks later the pregnancy was interrupted on account of progressive tuberculosis. Frank and Nothmann's assertions in regard to the value of alimentary glycosuria as a sign of pregnancy have been confirmed by others' experience. Glycosuria after test ingestion of 100 gm. glucose—when the sugar content of the blood is not over 0.19 per cent.—is strong presumptive evidence of a pregnancy. [Their announcement was summarized in THE JOURNAL April 16, 1921, p. 1141.] The phlorhizin method is a simplification and refinement of this test. How early it can be positive is still a question. In several cases only eight or ten days had elapsed since the last menstruation. A positive response seems to be obtained only in the first three months.

Cocain Poisoning.—Pulay relates that in the last two weeks he has encountered five cases of an erythema in the domain of the trigeminal nerve, resulting from the abuse of cocain. In one case there had been also an attack of convulsions and unconsciousness, the pulse low and fast, the pupils widely dilated. The patients all confessed that they had been trying cocain. In some other cases the rash had followed the use of cocain by a dentist. In one dental case there was an epileptiform seizure the same evening, and the erythema developed the next morning.

Intracranial Serotherapy in Tetanus.—Fränkel relates experiences with grave tetanus in which the patients recovered after subdural injection of tetanus antiserum by lumbar puncture and by trephining of both hemispheres. In one case the incubation had been only forty-eight hours and recovery followed this treatment. Gottlieb has reported that rabbits were saved by trephining and injecting the antiserum in the vicinity of the medulla oblongata after an interval of sixty hours since the injection and of twenty-five hours after the onset of the tetanus. Fränkel has applied the antiserum intracranially in 7 grave cases, and recovery followed in all but 2; in one of the fatal cases mixed infection with gas bacilli was responsible for the fatality, and in the other, a potent antiserum was not available. He cites further Böcker's 2 cases and Slojanoff's case, which have converted them to the supplementary intracranial method, even for cases with a long incubation period, as they are liable to take a turn for the worse at any moment.

Nonspecific Treatment of General Paresis.—An article by Fischer on this subject was summarized in these columns March 11, 1922, p. 768. He here gives the minute details for the treatment with which he has been successful. He begins with 2.5 c.c. of a 10 per cent. solution of sodium nucleinate injected subcutaneously in the arm or between the scapulae. After two or three days, 3 or 4 c.c. are injected in the other arm. Increasing the dose in this way, he reaches 10 c.c., and this is repeated twice, with intervals of several days. Then the treatment is suspended for two or three weeks, and then the series is begun anew from the first. Three or four such series constitute the course.

Monatsschrift für Kinderheilkunde, Leipzig

February, 1922, **22**, No. 5

*Alimentary Fever in Infants. Bessau et al.—p. 641.
*Gordon's Patellar Reflex in Chorea Minor. Noeggerath.—p. 657.
*Prognosis of Tuberculosis in Children. F. X. Cieszynski.—p. 663.

Fever of Alimentary Origin in Infants.—On the basis of a careful survey of their cases of alimentary fever in infants, Bessau, Rosenbaum and Leichtentritt have reached certain conclusions which may be summed up as follows: The temperature curve is not a reliable indication of the severity of acute food disturbances. The temperature may be normal or subnormal in gastro-intestinal toxicosis. In such cases an increase or fall of temperature may signify improvement or the opposite. The influence of hunger and ingestion of food on the temperature curve is hard to determine; in fact, every change in temperature is difficult to interpret. The course of the disease can be controlled only by careful consideration of the other symptoms of intoxication. The increased permeability of the gastro-intestinal mucosa occurring in toxicosis is due to exsiccation; local intestinal irritation need not be assumed. It is not an absolutely constant but apparently a very frequent phenomenon. The blood in gastro-intestinal toxicosis is found to be sterile. In the gastric contents in two thirds and in the duodenal contents in almost all of the cases the colon bacillus was found in large numbers. Negative findings in stomach and duodenum are probably due without exception to the inhibitory effect of the hydrochloric acid. Leukocytosis varied between wide extremes, 9,300 and 43,900, and was not dependent on the severity of the affection.

Diagnostic Significance of Gordon's Patellar Reflex for Chorea Minor.—As the result of Noeggerath's investigations

on a group of normal children and a number of children suffering from chorea minor, he states that the Gordon patellar reflex is frequently observable in chorea minor but that it also occurs in children not so affected (in 7 out of 68). This reflex has therefore only a restricted diagnostic value in chorea minor.

Laboratory Methods in Prognosis of Tuberculosis in Children.—Cieszynski says that the refractometric index of the blood serum increased steadily in his cases with a good prognosis and decreased regularly in cases with a bad prognosis. Increase in the percentage of lymphocytes signifies a good prognosis and a decrease a bad prognosis. Disappearance of the eosinophils is a bad sign. Ehrlich's diazoreaction deserves its recognized prognostic value. The Weiss and the Russo reactions, on the other hand, have no prognostic significance. Urobiligenuria and urobilinuria can be used only conditionally for the prognosis.

Zentralblatt für Chirurgie, Leipzig

Feb. 4, 1922, **49**, No. 5

Ligation of the Hepatic Artery Without Injury to the Liver. F. von Hofmeister.—p. 154.
Question of Drainage After Strumectomy. C. Vidakovits.—p. 157.
Blood Pressure Rises with Torsion of Mesentery. Maluschew.—p. 162.
Diagonal Arc Abdominal Incision in Purulent Cases. Vogeler.—p. 163.
"So-Called Ulcus Simplex of the Intestine." A. W. Fischer.—p. 166.

Zentralblatt für Gynäkologie, Leipzig

Feb. 4, 1922, **46**, No. 5

Spontaneous Intra Partum Hematoma of Abdominal Wall. Lichtenstein.—p. 162.
Origin of Cavities in Human Ovum. H. Hinselmann.—p. 165.
A Carcinomatous Uterine Sarcoma. F. Klee.—p. 166.
Metreurysis versus Cesarean Section for Placenta Praevia. Heinlein.—p. 170.
*Alcohol to Arrest Hemorrhage. H. Reh.—p. 176.
Hydatid Cyst in Douglas' Pouch Impeding Childbirth. Louros.—p. 178.

Use of Fifty Per Cent. Alcohol Solution for Hemostasis.—Reh recommends highly the injection of a 50 per cent. alcohol solution to check hemorrhage of the uterus and bladder. He has employed the method frequently in hemorrhages following abortion and in hemorrhages in connection with endometritis. He injects in from one to two minutes 150 c.c. of the solution into the uterus, through a two-way catheter, very slowly and without pressure, in order not to irritate the tubes. He was always satisfied with the results and the procedure seldom caused any pain.

Arbeiten a. d. Anat. Inst., Sendai, Japan

April 5, 1922, No. 7

*Microscopic Anatomy of Brain-Stem. G. Fuse.—p. 1.
Comparative Anatomy of Muscles of Eye. S. Nishi.—p. 65.

Microscopic Anatomy of Brain-Stem.—Thirty-six fine plates accompany this third report of microscopic research on the gray matter in man and animals. (In German.)

Mitteil. ü. Pathologie, etc., Univ. Sendai, Japan

Jan. 31, 1922, **1**, No. 3

Nature of Nissl Body and Nucleoproteid-Like Granule. Marui.—p. 413.
Influence of Bacterial Toxins on the Ear. G. Shimodaira.—p. 421.
Healing Processes in Cornea and Iris. Y. Hayashi.—p. 481.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 11, 1922, **1**, No. 10

*Pathology of the Newly Born. C. de Lange and J. C. Schippers.—p. 950.
*Anatomic Diagnosis of Pulmonary Tuberculosis. W. Bronkhorst.—p. 964.
Aneurysm of Abdominal Aorta. G. P. van Trooijen.—p. 978.
Puerperal Eclampsia. A. Verschoor.—p. 981.
Extravital Cultivation of Tissue. M. A. van Herwerden.—p. 982.

Pathology of the First Weeks of Life.—A case of congenital universal dyskeratosis is illustrated; it is usually improperly called ichthyosis. There was no hyperkeratosis, only a dyskeratosis. The child died the fourth day. A case of intracranial hemorrhage described was evidently due to a hemorrhagic diathesis. Another infant succumbed to an internal hemorrhagic pachymeningitis. In a fourth case the brain showed microgyria with hydrocephalus. In conclusion a case is described in which necropsy of the 5 months infant confirmed the congenital heart defect, and disclosed an accessory liver, partial situs inversus and absence of a spleen, with other anomalies.

Anatomic Diagnosis of Pulmonary Tuberculosis.—Bronkhorst discusses both the qualitative and quantitative estimation and location of the tuberculous process, his article filling fourteen pages. He emphasizes the differences in the roentgen and physical findings which differentiate the productive process, the process with exudation, the cheesy process, cavity formation, and the healing process.

Acta Medica Scandinavica, Stockholm

March 2, 1922, **56**, No. 2

*Aneurysms of Basilar Artery. K. H. Krabbe and K. H. Backer.—p. 95.
*Fibrin Percentage in the Blood. H. C. Gram.—p. 107.
*The Anemia After Influenza. G. Lindberg—p 162.
*Pituitary Disturbance After Epidemic Encephalitis. A. Barkman.—p. 188.

Diagnosis of Aneurysms of Basilar Artery.—Krabbe and Backer describe the case of a syphilitic man of 36 with an aneurysm in the basilar artery. The clinical picture had suggested endarteritis with thrombosis in the region of the medulla oblongata. The man's complaint of "palpitations" in his head, which might have suggested an aneurysm, had not been heeded. The aneurysm was as large as a hen's egg, and was found intact at necropsy. Comparison of this case with similar ones on record confirms the alternation in the course, the paralysis and the ataxia alternating with partial recovery or stationary periods. (In French.)

Fibrin Percentage in Blood and Plasma.—Gram gives fifty-three tables here, presenting the findings in large numbers of persons with various diseases and controls, all tested by his new method. He refers for the technic to his publication in the *Journal of Biological Chemistry*, 1921. The normal fibrin content of the blood plasma in men was found between 0.36 and 0.20 per cent.; in women, between 0.38 and 0.29. Fibrin deficiency was found only in cases of pernicious anemia and degeneration of the liver. In hemophilia, the fibrin percentage was rather high, but he ascribes this to resorption of extravasated blood. High fibrin percentage is found in infectious diseases, tumors and after parenteral injection of protein, and in the pregnant. He ascribes the hyperinosis in all these cases to the slight hepatitis accompanying the pathologic condition. The hyperinosis and hyperleukocytosis are independent effects of the same toxic action, but the fibrin level of the plasma is the more dependable, sensitive and durable reaction. (In English.)

Anemia After Influenza.—Lindberg gave reduced iron in 19 cases of grave anemia consecutive to influenza. The dose was a 1 gm. pill, three times a day, and there was no constipation, he says, with these enormous doses. There were never any symptoms of intolerance, and the hemoglobin percentage doubled in from two to eight weeks in 13 cases and in twelve weeks in one, thus in 70 per cent., while it trebled in 25 per cent., in from six to eighteen weeks. No benefit had been previously derived from iron in any other form or from arsenic. The anemia was of the chlorosis oligochromemia type; the bone marrow had evidently suffered from the disease. The recuperation of strength and energy was remarkable in some of the cases, with hemoglobin down to 22 per cent. (In German.)

The Pituitary in Epidemic Encephalitis.—The case illustrated by Barkman suggests that we had better examine anew from the standpoint of pituitary insufficiency all our cases of epidemic encephalitis. His patient is a robust man of 35 who has increased 35 kg. in weight during the two years since his attack, and the deposits of fat are all at the points where fat accumulates in the female. The general aspect and skin and the expression have changed to a feminine type; the genitals are shrunken; there is scanty growth of beard, and vision is somewhat impaired, with sluggish reaction to light and no convergence. (In German.)

Ugeskrift for Læger, Copenhagen

March 16, 1922, **84**, No. 11

Comparison of Methods for Homogenization of Sputum. Gjörup and Bagger.—p. 275.